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THE OIL WEEKLY

OIL & GAS ENGINEERING

News Statistics

When You Buy

HUGHES TOOL JOINTS

You KNOW They are Interchangeable

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Operators, contractors and drillers from Venezuela to Oklahoma, from Mexico to Canada have found by years of use that "Interchangeability" is a positive feature of Hughes Tool Joints.

Uniformity of manufacture from highest quality material plus scientific heat treatment and complete tests give to Hughes Joints a maximum life of trouble free performance.

"Sold by Supply Stores Everywhere"

HUGHES TOOL COMPANY

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January 22, 1932

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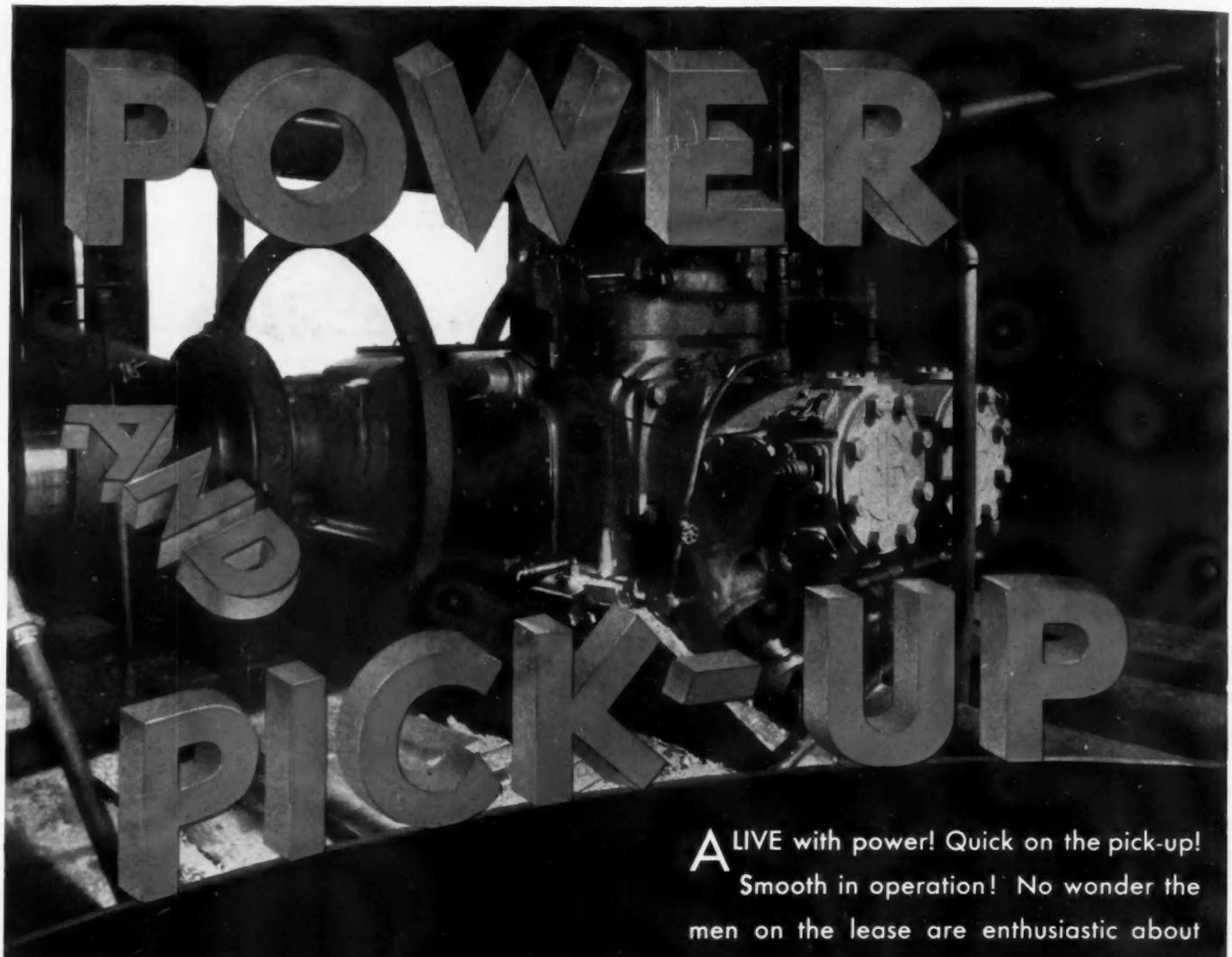
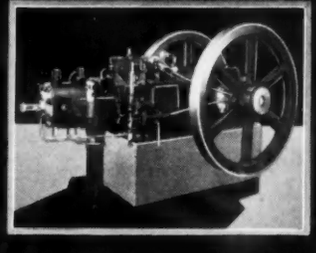


ALIVE with power! Quick on the pick-up! Smooth in operation! No wonder the men on the lease are enthusiastic about the new Type GAU. Here, in the field, is the kind of performance the name plate implies and the specifications indicate. Here is a convertible engine, rated 75 B. H. P., that you'll never regret having chosen.

THE NEW TWIN COOPER-BESSEMER FOR PUMPING AND DRILLING

Gas Fuel	Gas engine gives approximately 4-cycle economy, when gas injection pumps are used.
Oil Fuel	Oil engine operates with gas engine dependability, due to head design and fuel injection system.
Main Frame	Ruggedly built of semi-steel, so as to withstand emergencies.
Bearings	Greatly oversize Timken main roller bearings, sturdy enough for railway-car use.
Crankshaft	A very thick, tough die-forging; designed for lifetime service.

Type GA (single cylinder) convertible oil engine; 25 to 60 B. H. P. Just as much a champion, in its field, as the twin GAU.



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201 East First St. Tulsa, Oklahoma
1313 Magnolia Bldg. Dallas, Texas
640 East 61st St. Los Angeles, California
Suite No. 301, 25 W. 43rd St. New York, N. Y.

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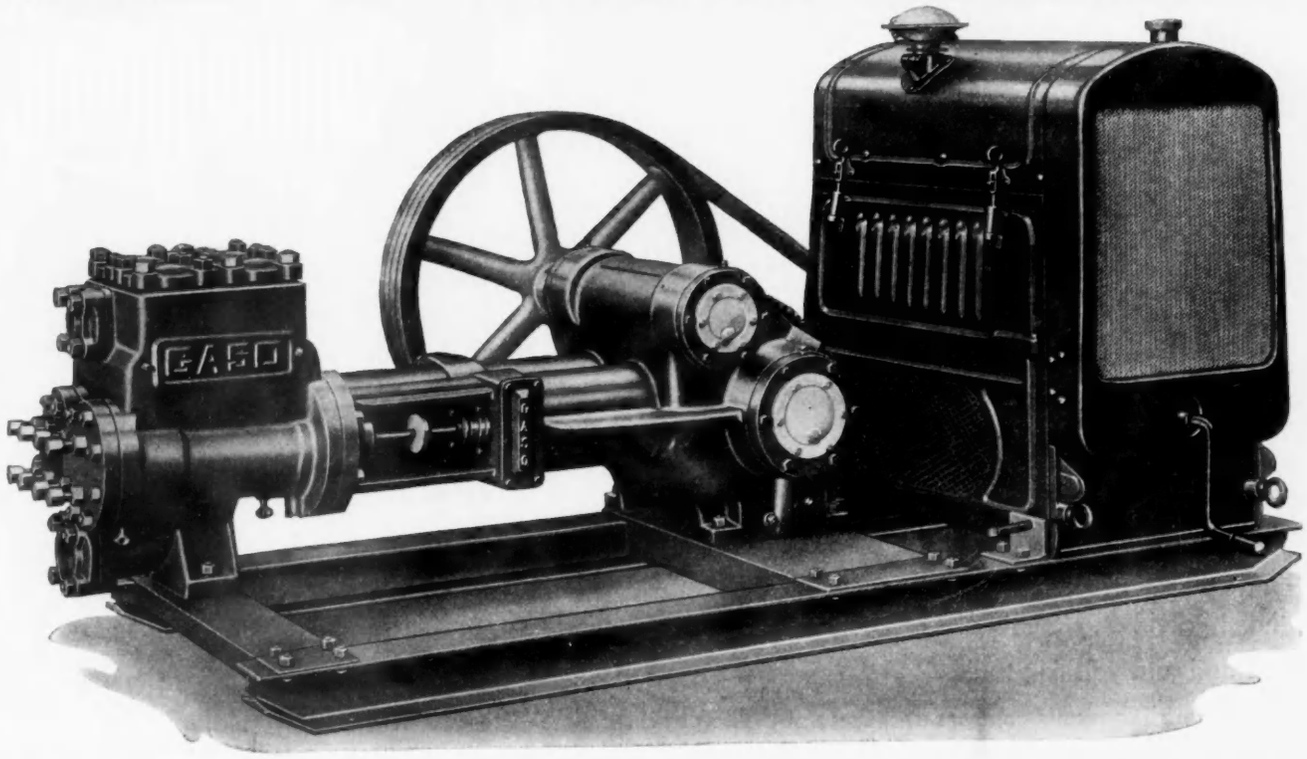
A SMALL HIGH PRESSURE UNIT BY GASO



3", 3½" and 4" x 6" GASO DUPLEX PISTON ENCLOSED DOUBLE-ACTING POWER PUMP

Capacity from 70 barrels at 750 pounds to 126 barrels per hour at 450 pounds.

Fully enclosed power frame, with sufficient length to prevent over lapping of piston rods. All Timken bearing, both main and pinion shafts being journaled in Timken Tapered Roller Bearings. Open hearth steel pinion shaft and crank shaft, all bearing surfaces being turned and ground. Connecting rods cast steel with removable steel shell bearing, babbitt lined, on crank end and bronze bushed on crosshead end. Wide faced semi-steel gear and forged steel pinion gear mounted in center. All parts lubricated by an oil bath.

Fluid end: equipped with inter-changable liners from 3" to 4", Monel metal valves, bronze seats, cast iron pistons, steel piston rods, cast iron snap piston rings.

Pump only, or equipped as illustrated with combination gas and gasoline engine, driven with "V" belt drive, all mounted on steel skids.

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for every oil industry need

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–*"the best steel obtainable"*–

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● "The best steel obtainable" – that's how the Bridgeport Machine Co. describes the Nickel Alloy Steel used in the pins and reamers of their deep well rotary bits. Case hardened Nickel-Chrome Steel S.A.E. 3115 is used for the cutters and heat treated S.A.E. 3250 is used for the pins and washers. The reamer bodies are forged from Nickel Alloy Steel S.A.E. 3140. Other Nickel Alloy Steels are used in Bridgeport drill pipe floats and rotary fishing tools.

When leading manufacturers and users of drilling and refining equipment require tools that must stand heavy punishment, they specify Nickel Alloy Steel. No other steel obtainable provides such extra strength, toughness and endurance.

Consult our engineers for recommendations on Nickel Alloy Steel when designing or purchasing new tools and machinery. Write today.

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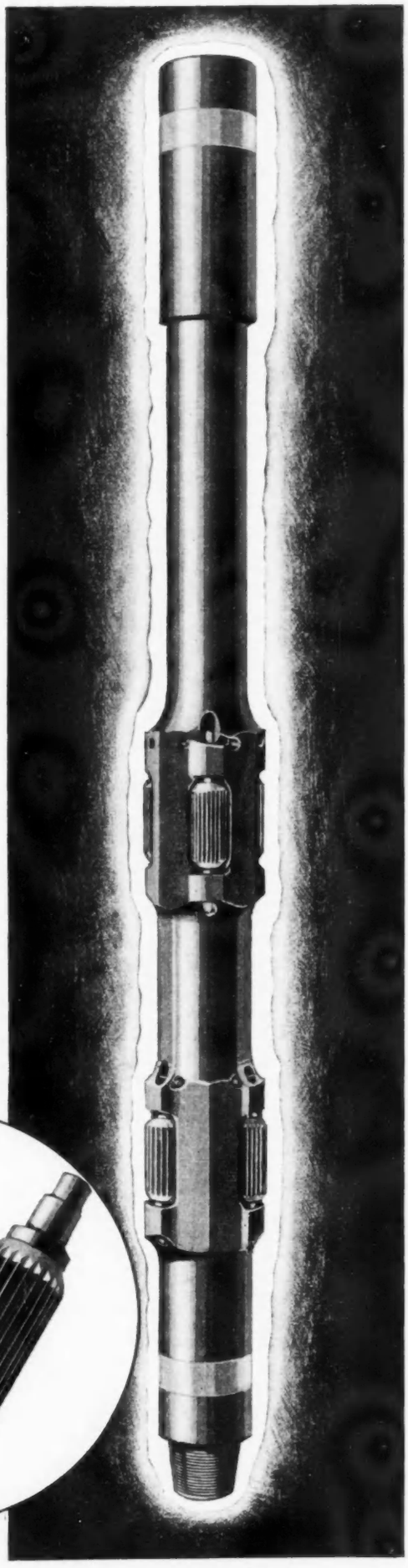
ALLOY STEEL
PERFORMS BETTER LONGER

Send for Bulletin No. 2, "Physical and Mechanical Properties of Nickel Steels"

INCO NICKEL

Dependable materials are the best assurance of dependable performance

RIGHT: New Bridgeport double 3-point Rotary Reamer with bodies of S.A.E. 3140 and cutters of S.A.E. 3115 Nickel Alloy Steel. Manufactured by THE BRIDGEPORT MACHINE CO., Wichita, Kans.



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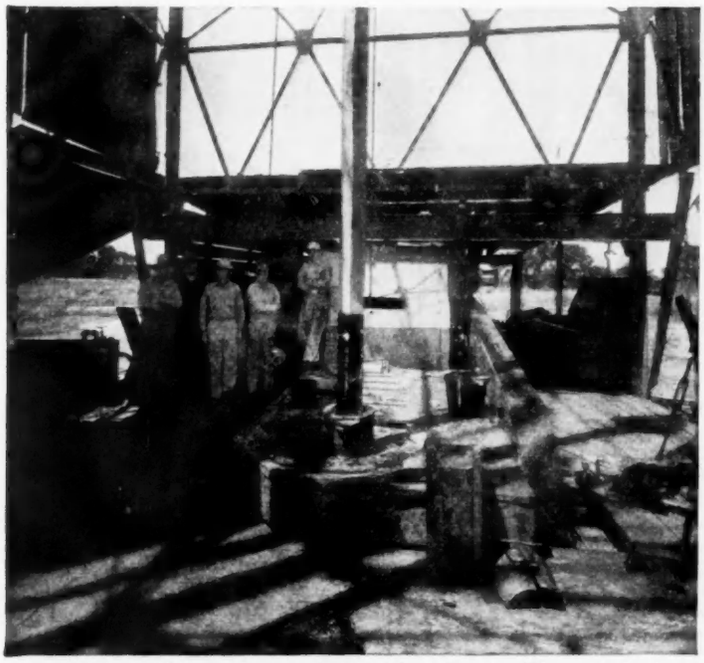
Miners, refiners and rollers of Nickel. Sole producers of Monel Metal
67 WALL STREET NEW YORK, N. Y.

Youngstown Seamless Drill Pipe is available in 95,000 pounds API Grade D, and 110,000 pounds API Grade E, minimum tensile strength.

In DRILLING



Rotary drilling—with Youngstown seamless in California Territory. Thousands of such wells have demonstrated that there is no superior to Youngstown drill pipe, tubing and casing.

In DISTRIBUTION

Laying a line of Youngstown 20" electric-weld pipe in Virginia.

OUT in the fields where wells are drilled or—stretching across the country to the centers of consumption, Youngstown steel pipe is serving the oil and gas industries in wells and pipe lines.

■ Whatever the service, whatever the conditions, the strength and endurance of this fine steel pipe is evidenced by its long life, its ability to stand abuse and its resistance to the corrosive actions of soil, atmosphere and moisture.

■ Thousands of miles of Youngstown pipe—in wells and pipe lines—have proved to oil and gas men the country over that Youngstown is a safe investment for every pipe need.

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FROM ORE MINE TO GAS LINE

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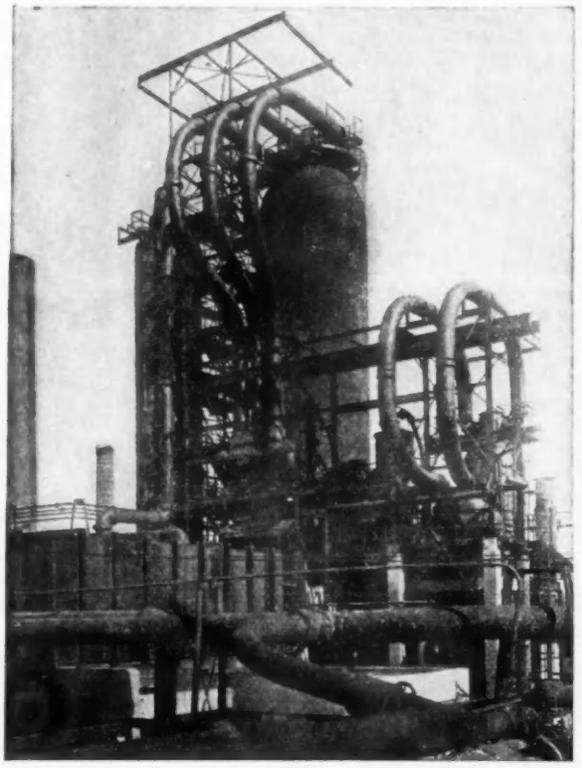

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Gasoline · Lubricating Oils

Naphtha · Gas · Oils

Wax · Petroleum Coke

Cylinder · Engine · Cordage

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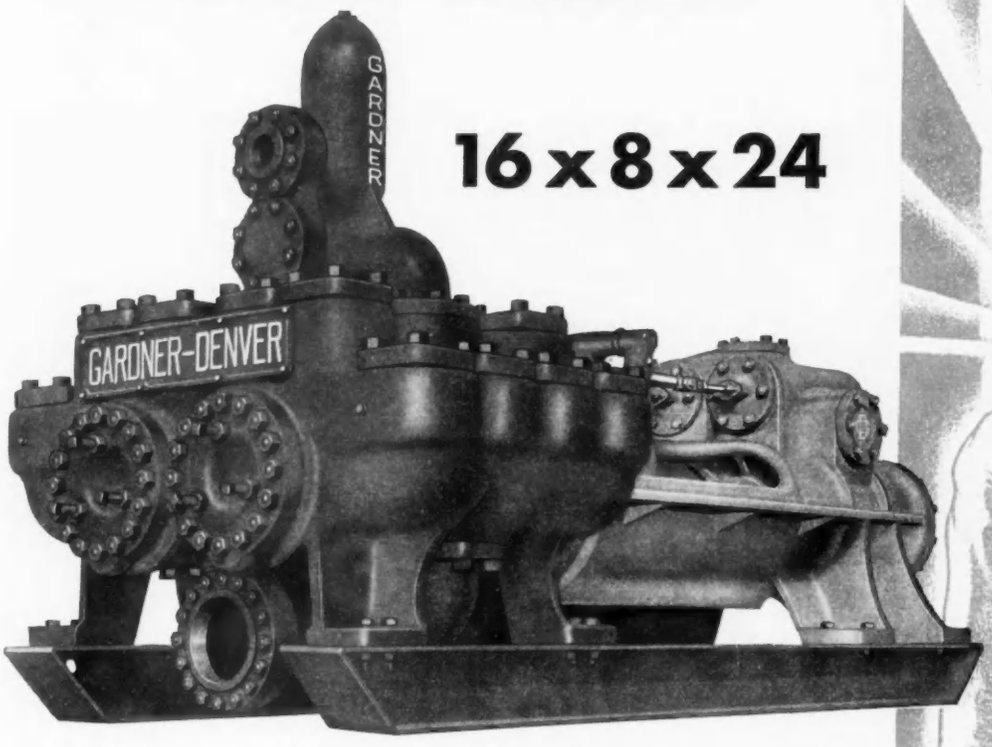
GREATER STRENGTH FOR HIGHER PRESSURES

GARDNER-DENVER MUD PUMP



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Sixteen new type, light weight mud valves —large passage area and steel to steel seat.

Valve pots are smaller with greater strength — suitable for higher pressures.

Divided fluid end. No walls to be cut through by mud.

Improved type over-size air chamber.

Balanced piston valves — minimum friction under high steam pressure.

350-Lb. steam end, cast integral with cradle. (Perfect alignment)

Heavy "H" beam skids — requires only a simple foundation.

Perfect alemite and force feed lubrication.

"If Continental Sells It . . . There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

GENERAL OFFICES: ST. LOUIS

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The Magic Carpet of Bagdad converted from fancy to fact by the wizardry of men and science . . . the youngest member of the transportation family already rich in the achievement that makes history . . . . that briefly is the story of the airplane.

Relief to the stricken in times when delay means disaster . . . . precious serums rushed to distant places in order that threatened epidemics may be averted . . . . cities once separated by weeks brought but a few hours apart—surely this is speed in the most CONSTRUCTIVE sense of the word.

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Petroleum is the precious fluid of industry, and it is the happy privilege of the Halliburton organization to have contributed, in no small measure, to its conservation in America. Halliburton Cementing Service, attuned at all times to the same exacting standards, saves **millions of barrels** of oil every year. It may justly be termed, therefore, a major contribution to the wealth and resources of the nation.

May we send you "The Cementer" as issued? There is no cost or obligation—simply send us your name and address . . . . Halliburton Oil Well Cementing Co., Duncan, Oklahoma.

HALLIBURTON

Safeguards Petroleum

» THE PRECIOUS FLUID OF INDUSTRY «

THE OIL WEEKLY

January 22, 1932
Vol. 64, No. 6

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S. W. ROBINSON
Editor

Published Weekly by
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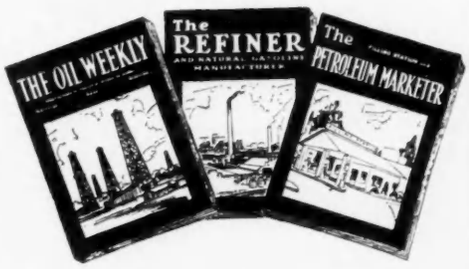

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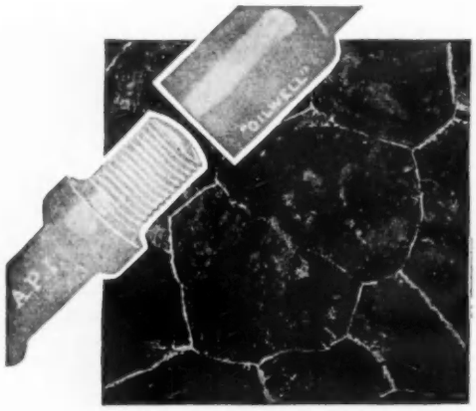

★ Actual photomicrograph of grain structure after forging of box and pin.

INVEST *in better* RODS

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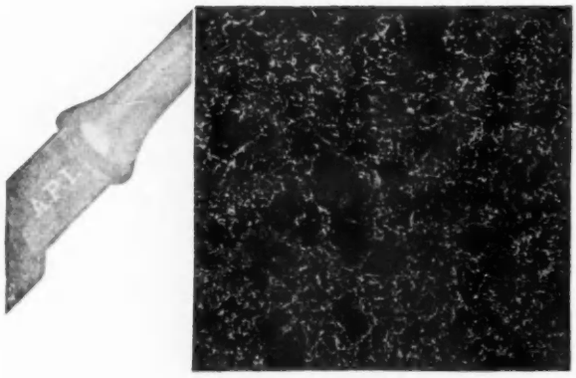
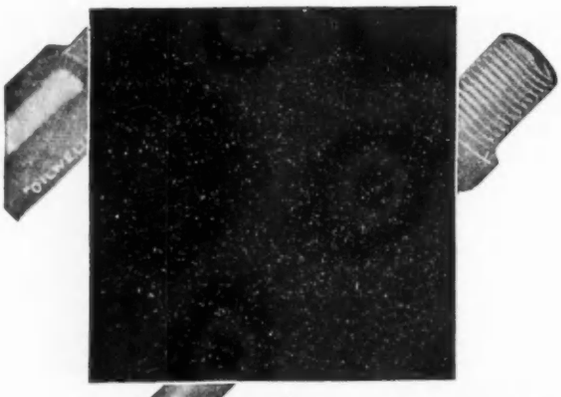
Triple Treatment



★ Actual photomicrograph of grain structure after *Normalizing*, only the *first step* in "Oilwell's" *Triple Treatment*.



★ Actual photomicrograph of grain structure after "Oilwell's" *Triple Treatment* to combine Strength, Toughness and Ductility.

★ Photographed under microscope; magnified 100 times.

TRY a string of "Oilwell" Triple Treatment Sucker Rods—a new development that gives you a Rod with greater refinement in grain structure.

The *initial* cost is slightly higher. Figuring that a sucker rod break costs you about thirty dollars, and that with "Oilwell" Triple Treatment Rods you have fewer breaks, the *ultimate* cost will prove a profitable investment.

Invest in one string, and realize the advantage of using "Oilwell" Triple Treatment Sucker Rods.

1711

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Branch Stores in all Oil Fields

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US STEEL

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JAN 25 1932

VOLUME 64, No. 6 JANUARY 22, 1932

THE OIL WEEKLY

SPECIALIZED TO OIL AND GAS PRODUCTION
AND PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

The Changing Panorama

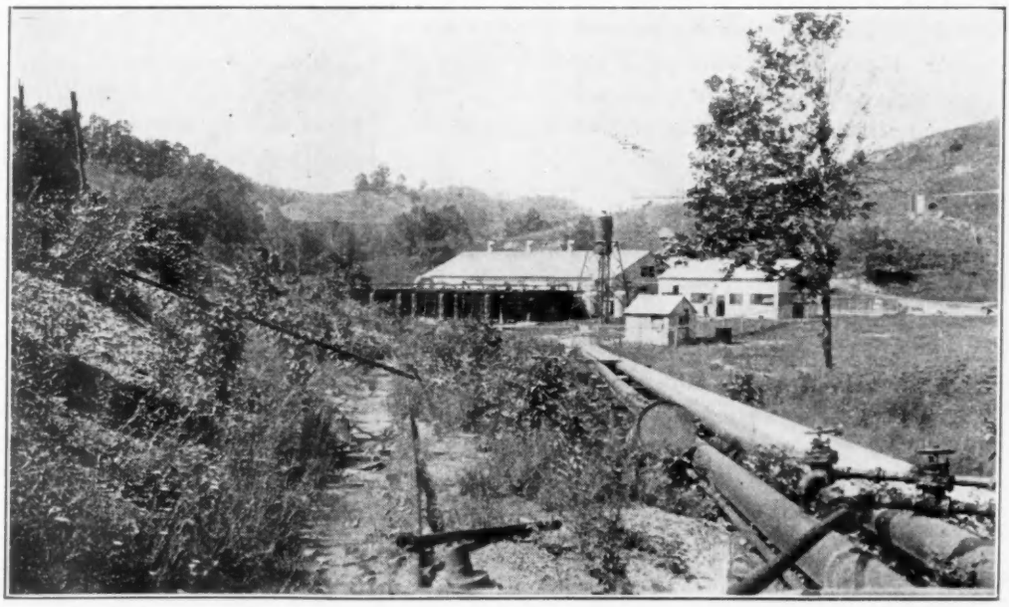
The board of directors of the American Petroleum Institute spent the major portion of their session in New York on Monday in a discussion of production and refining problems, without taking any action. The 33 directors present agreed among themselves that the problem of over-production is in no sense temporary and that both the industry and the nation need a long time program designed to conserve one of the country's greatest natural resources and to save the industry from drowning in a flood of oil.

President Beaty was authorized to reply to a new request from the Association of Roumanian Petroleum Industrialists for an international conference to seek an agreement on curtailment of crude oil production. The position of the Institute is as defined at the annual meeting, that the laws of the United States would prohibit any such attempt at agreement to control production of oil.

The directors adopted a resolution in opposition to an increase of the tax on gasoline in the District of Columbia from two to four cents, and joined with the National Automobile Chamber of Commerce in opposition against the levy of a federal excise tax on sales of motor vehicles. The resolution stated that federal enactment of a four-cent tax "would establish a positively disastrous precedent," although the board recognized that such a tax would tend to equalize that tax with taxes in adjacent states.

Gasoline Market Stronger

Oklahoma's influence was felt in bringing production of crude oil in the United States down 40,750 barrels to a daily average for the week of 2,193,450 barrels. Refiners' runs of crude to stills also dropped 40,000 barrels to 2,208,000 barrels, but gasoline stocks increased 750,000 barrels to 39,853,000 barrels. Balance of supply of crude to demand is indicated in all sections east of California, but the latter area continues to produce too much crude in the face of determined efforts on the part of many interested there to more effectively curtail. Despite the increase in stocks, gasoline was firm on the spot market in Group 3 at three cents per gallon, below profit, but an advance of three-quarters of a cent from the recent quotation.



REPRESSURING IN KENTUCKY

Compressor station in the background and arrangement of lines leading to and from the field, on properties of Swiss Oil Corporation at Martha, Kentucky.

A striking commentary on the present state of the stock market, particularly with reference to oil shares, is found in auditors' figures made public in connection with the Sinclair-Prairie merger. According to stock market appraisal, the total outstanding common stock of Sinclair Consolidated Oil Corporation, Prairie Pipe Line Company, and Prairie Oil & Gas Company, had a total sale value of approximately 90 million dollars at the close of business on the date on which the three boards of directors voted to merge their assets and activities. A consolidated statement of assets and liabilities as of May 31, 1931, which was made public at the same time, reveals that the current assets of the three companies totaled 143 2/3 million dollars, or about 60 per cent more than the Wall Street valuation. The three companies had more than 101 million dollars in cash and crude oil, conservatively valued, as of May 31, to say nothing of government and other negotiable securities appraised at more than 14 million dollars, or of other assets recorded at more than 28 million dollars.

In other words, provided there has not been a great shrinkage in the amount of cash on hand since May 31, the combined companies could give away all of their real estate, including a valuable property in the financial district of New York City, abandon all their oil and gas leases, junk oil wells capable of producing more than 100 million barrels per annum, sink 112,302 d.w. tons of tank ships, wreck 1100 tank cars, dynamite what will become the largest pipe line system in the world, burn all their refineries, terminals, and distributing stations—and still realize more than enough from quick assets to buy up all their outstanding common stock, if all of that stock actually could be had at current quotations.

Paraffin in East Texas

East Texas operators perhaps are not going contrary to the old adage about not crossing bridges, but more probably are preparing a pontoon in case of need, in the matter of paraffin trouble. So far there has been little difficulty from this source, but studies have been carried out looking to avoiding delays to operations by clogging of tubing and flow lines. It has been anticipated that real trouble will begin with cold weather, but so far the area has not experienced any severe weather since discovery of oil. Studies have included laboratory tests from which it has been determined that evaporation of lighter fractions of the crude, leaving paraffin as a deposit, is more to be avoided than is exposure of the flow lines to cold temperatures. It has been found that closing in the flowing wells, as is necessary under present quotas in the field, does not increase paraffin difficulties, and where trouble has been encountered, cleaning of the tubing has not been difficult.

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Salt Water Not Imminent

Prospects of salt water in East Texas holds much interest throughout the industry; in fact operators in other parts sometimes are more interested in this than are the owners of the wells. How soon water will ruin these wells and the volume of water that will have to be handled, has been a subject of engineering discussion since shortly after the area came into production. Of course all speculation and calculation was upset by the orderly withdrawal of oil under the drastic enforcement of proration, but it now appears that the looked for day of serious water trouble is far in the distance. Only about 50 wells out of more than 3800 completions are showing any water under the current restriction of flow, and only about 500 barrels of salt water daily is threatening stream polution. It is calculated that present withdrawals of oil is permitting the advance of water encroachment at the rate of one foot each 71 days.

Exactness in Air Pictures

In aerial photography and mapping, such as is used by the oil industry in locating lines and mapping for geology, the photographing crew covers something like 200 square miles of territory at one flight and with the exposure of three rolls of films. This means that 330 individual exposures have been made, and these must be fitted together to make the picture of the continuous area desired. Progress in the work has required working out such calculations as distortion by uneven surfaces and angle from the camera, and even the curvature of the earth must be allowed for in the more exact work. Flying height must be accurately ascertained and maintained during taking of the pictures, which also must be accurately timed with reference to speed of the plane, so that overlapping pictures will be secured. After the pictures are made they are carefully fitted together to secure a map of as large area as is required, showing all surface marks and, in cases, sub-surface conditions which otherwise could not be observed.

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Expect Stockholders' Approval Of Sinclair-Prairie Merger

NEW YORK.—Announcement was made last week of action by the board of directors of Sinclair Consolidated Oil Corporation, Prairie Pipe Line Company, and Prairie Oil & Gas Company in approving for submission to stockholders an agreement for the consolidation of the business, properties, and other assets of the three corporations.

It is contemplated that the Sinclair company shall change its name to Consolidated Oil Corporation, amend its charter, and make certain adjustments in its capital structure; and that thereupon the Prairie companies will transfer all their properties, assets, business, and good will unto the Consolidated company in consideration of the exchange of one share of Consolidated Oil Corporation common stock for each $25 share of the common stock of Prairie Oil & Gas Company now outstanding and 1.4 shares of Consolidated common stock for each $25 share of Prairie Pipe Line Company now outstanding. The common stock of Consolidated Oil Corporation will be without par value.

There are now outstanding 6,107,403 shares of the common stock of Sinclair Consolidated Oil Corporation, 2,441,432 shares of Prairie Oil & Gas Company, and 4,050,000 shares of Prairie Pipe Line Company, which will be convertible into 5,670,000 shares of Consolidated stock. Thus, the consolidated enterprise will have outstanding a total of 14,218,835 shares of common stock, when these exchanges are effected.

Shares of Consolidated Oil Corporation were admitted to the New York Curb Market on January 15, on a basis of "when, as, and if issued." Only 100 shares were traded on the date of admission, at a price of $6.37½ per share.

According to a consolidated statement prepared *pro forma* by Arthur Young & Company, accountants and auditors, of New York, the three companies had a combined net worth of $426,044,375.98, as of May 31, 1931, "after giving effect to adjustments necessary properly to reflect the relative

FINANCIAL STATUS OF COMPANIES IN COMBINE

ASSETS

	Total Combined Companies	Sinclair Consolidated Oil Corp. and Subsidiaries	Prairie Oil & Gas Co. and Subsidiary	Prairie Pipe Line Co. and Subsidiary
a Real estate, oil and gas leases, oil wells and equipment, pipe lines, steamships, tank cars, terminals, refineries, distributing stations and facilities, etc.	$351,937,770	$216,469,624	$61,608,066	$73,860,080
Investments in and advances to controlled and other Cos.	20,983,412	16,964,905	4,018,507	.....
Other investments and advances	6,307,786	.....	5,929,491	378,295
Invested reserve funds	4,494,223	4,494,223	.....	.....
Cash	50,391,154	21,093,908	16,061,537	13,235,710
U. S. government and other marketable securities	14,152,040	.....	.....	14,152,040
Notes and accounts receivable less reserve	17,193,872	12,533,979	2,009,113	2,650,780
Crude oil and refined products at lower of cost or market	50,898,194	22,276,747	27,614,176	1,007,271
Materials and supplies	9,605,541	7,178,868	1,632,967	793,705
Other current assets	1,423,129	1,314,922	108,207	.....
Balance on contract for common stock (liquidated June 25, 1931)	1,536,120	1,536,120	.....	.....
Notes and accounts receivable by the Prairie Pipe Line Co. from the Prairie Oil & Gas Co.	.....	.....	¶28,853,317	28,853,317
Bonds and stocks of Sinclair Consolidated Oil Corp. owned	1,249,826	1,249,825	.....	.....
Deferred and unadjusted items	2,343,555	1,612,644	550,078	180,834
	$532,516,622	$306,725,765	$90,678,825	$135,112,032

LIABILITIES

Preferred 8% cumulative capital stock (par $100)	$14,129,400	$14,129,400	.....	.....
Miscellaneous reserves	1,335,339	1,335,339	.....	.....
First lien collateral gold bonds—				
7% Series "A" maturing March 15, 1937	43,905,700	43,905,700	.....	.....
6½% Series "B" maturing June 1, 1938	20,887,000	20,887,000	.....	.....
Pierce Oil Corp. 8% gold bonds, maturing Dec. 15, 1931	263,500	263,500	.....	.....
National Steel Car Line equipment trust certificates, Series "E" maturing semi-annually to Nov. 15, 1932	1,125,000	1,125,000	.....	.....
Purchase money obligations	1,726,631	1,726,631	.....	.....
Accounts payable	14,359,786	12,685,754	1,483,448	190,585
Accruals and miscellaneous	5,611,594	2,855,779	1,523,320	1,232,495
Dividends payable and/or accrued	3,128,296	90,796	.....	3,037,500
Net worth represented by common capital stock	*426,044,376	†207,720,866	‡87,672,057	$130,651,452
	$532,516,622	$306,725,765	$90,678,825	$135,112,032
Contingent liabilities:				
Endorser on Producers & Refiners Corp. notes	.....	.....	$10,290,643	.....
Lease purchases contingent on production	.....	.....	6,000,000	.....
			$16,290,643	

*Number of shares outstanding upon consolidation 14,218,835. †Number of shares outstanding 6,152,403. ‡Number of shares outstanding 2,441,432. §Number of shares outstanding 4,050,000 ¶Deduction (a) After depreciation, depletion and amortization.

values and to state the accounts of the three companies on a comparable basis." This is equivalent to $29.96 per share of common stock outstanding. However, at the close of business on January 13, date of the directors' meetings above referred to, the common stocks of Sinclair Consolidated and Prairie Oil & Gas Company were each quoted at $6.50 per share, while the common stock of Prairie Pipe Line Company was valued at $8.50 per share.

According to stock market appraisal, therefore, the three companies were worth only $89,992,427.50, combined, a figure which contrasts strikingly with others revealed in the statement above referred to, which include 50 million dollars in cash, nearly 51 million dollars in crude oil valued at the lower figure of cost or market value, 14 million dollars in securities, and 17 million dollars in notes and accounts receivable.

Consolidated Oil Corporation will rank in assets below the Standard Oil companies of New Jersey, Indiana, and California, and below the Socony-Vacuum Corporation and The Texas Corporation. The latter company, recognized as the largest independent in the United States, was worth something over 129¼ million dollars at the close of business on January 13, if measured by the same yardstick of Wall Street.

The Sinclair and Prairie groups have long been recognized as having a peculiar affinity for each other. Since the construction of the Atlas pipe line and the consequent divorcement of Standard and Prairie interests, Prairie Pipe Line Company has lacked adequate outlets for its transport capacity. On the other hand, since the sale of its half interest in Sinclair Pipe Line Company and Sinclair Crude Oil Purchasing Company to Standard Oil Company (Indiana) in July, 1930, Sinclair Consolidated has lacked trunk line facilities between its production and its refineries. It is pointed out that nearly all of Sinclair's 132,000 barrels of daily refining capacity at East Chicago, Kansas City, Coffeyville, Sand Springs, Wellsville, Houston, and elsewhere, is located along or near Prairie's transport system. Most of these plants are already served by the Prairie lines, although a few short connecting links will require to be constructed, as at Fort Worth. Prairie lines are equally well placed to serve Sinclair's producing properties. The Prairie system totals more than 13,000 miles of pipe, including 6300 miles of trunk lines extending from the Gulf of Mexico to Wood River, St. Louis, and Chicago, connecting also with other trunk lines extending eastward to the Atlantic Seaboard. Gathering lines tap the principal producing fields of Texas, Oklahoma, and Kansas.

This consolidation of Prairie lines with Sinclair lines built since July 1930, will create the largest pipe line system in the world. The transport capacity of the Prairie system is mentioned in the official announcement as "more than 200,000 barrels daily;" but it is a matter of record that crude oil deliveries averaged 215,000 barrels per day during the calendar year 1929. It was announced in connection with the merger that Sinclair markets more than one billion gallons of gasoline per annum through 33,000 retail outlets in 45 states and in Mexico, Cuba, Germany, and other European countries.

It is said that this merger consolidates crude oil resources having a potential productive capacity of nearly one-third of a million barrels per day. Actual output, of course, is restricted to around 75,000 barrels per day, under proration arrangements now in effect in the various oil-producing states.

Prairie Oil & Gas Company, primarily a producing, storing, and crude oil marketing organization, has in storage approximately 50,000,000 barrels of crude oil, which was appraised at cost or current market value, the lowest figure being used in each instance. Prairie's crude production, which is said to range between 28,000 and 30,000 barrels per day, under proration, is located principally in Kansas, Texas, Oklahoma, New Mexico, and Wyoming. Prairie Oil & Gas Company is also a major factor in the natural gas industry of the Northwest, Middle West, and Southwest.

It is said that over 100 million dollars were written off in the revision accounts incident to the merger. Crude oil production, for example, was valued at $350 per barrel, not because that figure is believed to represent current values, but simply as a common denominator for the appraisal of the assets of both companies. It was stated that in the official announcement that:

"It is contemplated that the consolidated enterprise will begin operation with a capitalization based upon property values conforming to present economic conditions. This will be accomplished by book entries reducing the value now assigned to the common stock to $5 per share and transferring the excess over $5 per share to capital surplus. The capital surplus so created will enable the board of directors to apply so much thereof as they deem advisable to writing down the balance sheet valuation of capital assets of the company. It is also planned to take the properties of the Prairie companies into the consolidated enterprise on an adjusted value basis. It is for this reason that stockholders are to be asked to approve the reduction of the stated capital in respect of the common stock of the corporation to $5 per share. This readjustment of book values does not, of course, affect the stockholders' equity in the assets of the corporation. The directors consider such re-

Blank & Stoller, Inc.

HARRY F. SINCLAIR

adjustment desirable in any event and stockholders will, therefore, be asked to reduce the capital whether the proposed consolidation is or is not consummated.

"Upon consummation of the consolidation each of the three present companies will be represented on the board of directors.

"Application will be made to list the additional stock of Consolidated on the New York Stock Exchange. Certificates of stock now outstanding under the name of Sinclair Consolidated Oil Corporation will be exchangeable for certificates in a like number of shares, respectively, under the name of Consolidated Oil Corporation.

"A special meeting of the Sinclair stockholders is to be held at the office of the corporation, New York City, on March 1, 1932, for the purpose of considering and taking action on the consolidation and related proposals. Stock-

HERBERT R. GALLAGHER

holders entitled to vote at this meeting will be those of record at noon January 23. Meetings of the stockholders of the Prairie companies will be called for about the same date.

"It is contemplated that when the board of directors of the Consolidated Company is organized, the following officials of the new corporation will be elected: H. F. Sinclair, chairman, executive committee; W. S. Fitzpatrick, vice chairman, executive committee; E. W. Sinclair, chairman, finance committee, and H. R. Gallagher, president."

It has been stated on behalf of the companies about to be merged that no program of reorganization or reduction of personnel is contemplated, their activities being so unrelated and including so little of duplication that no reduc-

W. S. FITZPATRICK

tion of staff will be necessary. It is said that Mr. Fitzpatrick may remove to New York City, but that no major shifting of personnel is to be expected.

Personnel and Headquarters Holds Mid-Continent Interest

Tulsa.—Now that the Prairie-Sinclair merger has been placed in the hands of stockholders the chief concern in the Mid-Continent has been turned to questions concerning the location of operating headquarters as well as the official personnel. The formation of Consolidated Oil Corporation out of Sinclair Consolidated Oil Corporation, Prairie Oil & Gas Company and Prairie Pipe Line Company is accepted as certain. Approval of stockholders is looked upon as only a formality since the temporary directorate is known to hold a majority of the three issues of common stock.

The merger had been before the petroleum industry for such a long period that the official announcement carried few surprises. One was the selection of H. R. Gallagher as president. By rumor several men had been awarded this post but in no instance was the name of the vice president of Shell Oil Company of California brought to the fore.

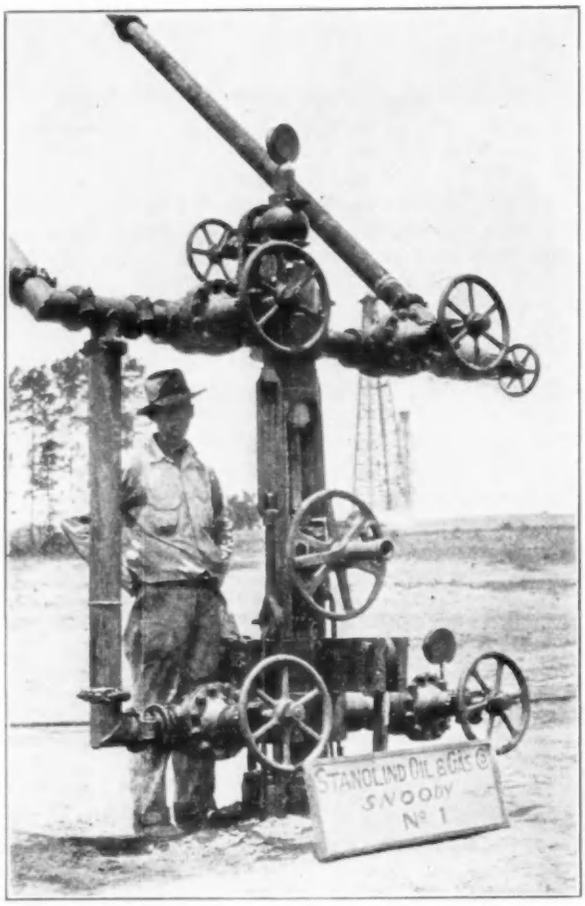
The announcement of January 13 designates him as president and operating official. His reputation on the Pacific coast would indicate that Consolidated Oil Corporation will march forward as a marketing organization; for Mr. Gallagher had charge of marketing for the western

(*Continued on page* 30)

Paraffin Clogging in East Texas Wells Being Studied

Experiments Indicate Vaporizing of Crude Oil Is More Important than Cold Weather in Causing Precipitation of Troublesome Ingredients

ALTHOUGH there have been only relatively few of their wells so far which have been hampered in production because of clogging with paraffin, operators in the East Texas field are anticipating extensive trouble in the immediate future because of two factors which are generally believed, correctly or incorrectly, to lead to paraffin accumulation. In the first place it is commonly supposed that impending colder weather will result in clogging of the wells and flow lines, due to the paraffin congealing at the low temperatures. In the second place it is believed that the paraffin accumulation may be aggravated by the small quotas set under the conservation program as daily production allowances.



Close-up view of a Christmas tree arrangement on a well in the East Texas field, Stanolind Oil & Gas Company's Snoody 1 in the Longview district. Chester Stone, in charge of handling production from the well, is the man in the picture.

Whether or not either or both of the above factors have any bearing on the paraffin trouble, the East Texas operators are devoting much thought to the paraffin situation, and they are well justified in doing so. For the crude which they are producing is high in paraffin content, and the trouble which may arise from the presence of the paraffin is demonstrated by other fields yielding paraffinic crude, such as the Texas Panhandle fields, the McElroy field of West Texas, the Lytton Springs pool of Central Texas, and various fields in Oklahoma. Furthermore, there has always arisen sufficient paraffin trouble in the East Texas field itself to demonstrate the need for planning means and methods for combatting the spreading of the difficulty to other wells.

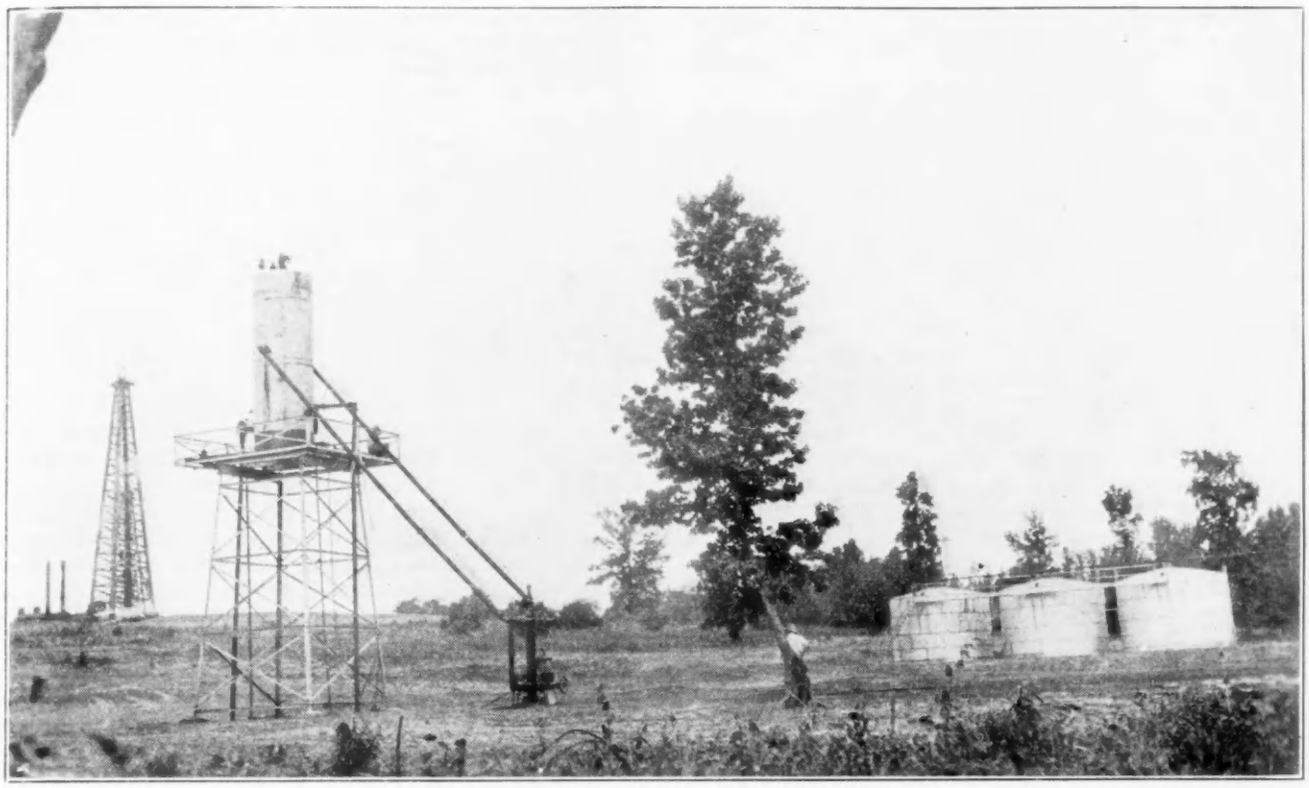
With respect to the factors which have been mentioned above as receiving, consideration in connection with the paraffin situation, that is, the curtailing of production in accordance with conservation regulations and the expected colder weather, some very interesting and possibly revolutionary ideas and theories have been advanced by engineers who have studied the problems and principles involved.

Conditions as found in the field and in the laboratory have led engineers of one company to believe, for instance, that cold weather does not necessarily cause the paraffin to solidify, and that if the wells are properly handled there will be no accumulation of that substance on the face of the oil sand or in the tubing, casing, or flow lines, even in weather considerably below freezing.

As an explanation of the paraffin accumulation which does occur in the East Texas wells those engineers say that it is probably due to vaporizing of the lighter constituents of the paraffinic crude oil at the top of the well or in the flow lines or tanks and depositing of paraffin and other heavier products as the lighter fractions are liberated into gaseous form.

Laboratory Tests

In substantiation of that explanation the results of a laboratory experiment are cited. Two samples of the paraffinic East Texas crude oil were reduced to a temperature of 18° F. each, one sample being in a closed, air-tight container, and the other being in an open container, exposed to the air at the top. The enclosed sample reached the 18-degree temperature without any change in appearance, being entirely liquid and free of congealing. The other sample upon reaching the same temperature had partially congealed, and contrary to results which might have been expected, the solidified paraffin formed a crust at the top of the container instead of settling to the bottom. A third



A flowing well in the Longview district of the East Texas field, with oil and gas separator immediately adjacent, mounted on 28-foot steel platform, and 1000-barrel lease tanks in the background.

sample of the crude oil was then taken and placed in an open container and it was exposed for about 24 hours to the atmospheric conditions and temperature (75° F.) of the laboratory. At the end of that time it was covered, like the other open container, with a coating of paraffin at the top. It is known, however, that paraffin is one of the heavier ingredients of crude oil, as shown by the fact that it commonly settles to the bottom of the tank when it occurs in solidified form in a tank of crude oil.

Considering all the circumstances, it was concluded from the above experiments that the setting free of the paraffin was due not to change of temperature but to evaporation at the surface of the oil.

In explaining the fact that the liberated paraffin of crude oil commonly settles to the bottom of the tank, the suggestion is offered that the substance first forms a scum or layer at the surface of the crude oil in the tank as in the laboratory test mentioned. In the laboratory test the layer of paraffin is sufficiently small in area and thick enough relatively to suspend itself at the surface of the fluid. But in the crude oil tank the area is great and the thickness relatively small, and against the agitation of the oil in filling the tank the paraffin layer cannot sustain itself. Breaking under the strain, the layer goes to pieces and the particles sink in the underlying crude oil to the bottom of the tank, being heavier than the oil. Continuing, the process results in appreciable quantities of the paraffin freeing itself from the crude oil and sinking to the bottom of the tank.

In further substantiation of the above ideas, it is a fact that observations made of the crude from the East Texas wells have shown widely varying results as to the temperature at which the oil congeals. In some instances there is a congealing of the paraffin at 60° F., while in others it has been reported that the crude has reached a temperature of zero without paraffin solidifying.

Similarly, the importance of the vaporizing action in paraffin accumulation is indicated in the fact that the East Texas wells much more readily become clogged with paraffin when flowed through very small chokes than when produced through larger openings. One explanation for the greater paraffin accumulation with the smaller choke is that the well under that condition develops a relatively large volume of gas in the upper portion of the tubing or oil string due to the back pressure which it encounters, resulting in relatively large gas production along with the oil production, and leading in turn to further large vaporizing of the crude oil, the lighter fractions passing into the gaseous state and the heavier portions, including paraffin, being left, with the consequence that some of the paraffin accumulates in the pipe.

The company previously mentioned as having had engineers at work on the paraffin situation has found in this connection that practically all paraffin accumulation in the East Texas wells is between the surface and the depth of 500 feet, and that the nearer the point of accumulation is to the surface the greater the amount of the paraffin. In no instance has the paraffin accumulation been noted by the company at depths greater than 700 feet. It is estimated that the gas which collects at the top of the well starts coming out of solution at about 1500 feet below the surface.

Aside from being free of vaporizing which might lead to paraffin accumulation the oil in the lower portion of the well is probably rendered immune from paraffin trouble by the relatively great heat of the bottom of the well. For it has been found through much experimentation in the East Texas field that the average temperature at the bottom of the well is around 140° F., a temperature which is amply high to stabilize a paraffin solution. Similiar high temperatures at the bottoms of the wells may be expected, furthermore, throughout the life of the field, for as oil is withdrawn the space which it vacates is replaced with hot salt

water, the association of the water with the oil being interpreted as causing the generation of the heat.

The above experiments and theories are based altogether upon flowing wells, since the East Texas field is largely in the flowing stage, less than 200 out of about 3700 producers being on the pump. It is believed, furthermore, that the output will continue as flowing production over a long period, particularly if the field is kept under restricted operation as at present. For it has been the history of other Texas fields producing from the Woodbine sand that 60 to 75 per cent of all recovery is flowing production. Assuming that the conservation program in the East Texas field will conserve gas and give it its maximum lifting power, the percentage of flowing production may be higher for that large field than in the older fields mentioned. It is a logical conclusion, therefore, that for an indefinite period the principal instances of paraffin trouble in the East Texas field will be in flowing wells.

Considering the accumulation of paraffin as being due primarily to vaporizing of the lighter fractions of the crude oil, the engineers who experimented in that connection are of the opinion that very little paraffin trouble will be experienced in the East Texas field despite any cold weather which may occur if proper precautions are taken, both with respect to handling the well itself and in regard to regulating flow lines, separators and tanks at the surface to prevent clogging beyond the well head. Those necessary precautions, they believe, consist, in the first place, of reducing vaporizing action in the well by producing the full daily allowance (now 100 barrels per well) within a few hours rather than during the full 24 hours, and in the second place, of keeping the flow lines full of crude oil at all times, even when the well is shut in, so that the oil which would otherwise remain in small quantity in the pipes will not be exposed to the vaporizing action.

Aside from limiting East Texas production to 100 barrels daily per well, the rules which are in effect under the conservation program require that all wells be produced through tubing in order to conserve gas. It is in the tubing, therefore, that paraffin clogging occurs.

No stipulation is made, however, as to the rate at which the daily quota may be produced, other than the requirement that all production which is allowed for one day must be produced during that day.

Aside from all laboratory experiments and theoretical considerations, it has been found in actual field practice that it is not advisable to try to spread the small allowable production over the full 24 hours of the day, because so small a choke as is required in that method results in waste of gas through too high a gas-oil ratio, while at the same time the accumulation of paraffin in the well is accentuated. It is found more practicable to withdraw the full allowance, now 100 barrels daily, within a period of a few hours, usually from two to five or six hours.

In addition to reducing the tendency toward evaporation and depositing of paraffin, the higher rate of production is regarded as affording a flushing effect tending to force accumulated paraffin up through the tubing and out of the well. By virtue of the more rapid production, furthermore, there is a more extensive conveying of the relatively great heat of the bottom of the well up through the tubing, tending to keep the paraffin from congealing if its accumulation is considered as due to low temperatures.

Not Hurt By Shut-In

The exact rate at which it is best to produce a well depends upon the individual characteristics and behavior of the well, and only by experimentation can the most effective results be obtained.

The question naturally arises as to whether or not the period of 18 hours or so during which the well is shut down daily between periods of production will result in accumulation of paraffin in the well. As evidence that the well's standing idle does not cause paraffin clogging the instance is frequently cited that the field was completely shut in for 19 days last August under martial law and that there was not in the meantime any clogging, as a rule, the wells responding after lifting of the shut-down by readily flowing, in many instances showing greater pressure than before the shut-down.

Following of the above practice of obtaining the daily allowable production within a few hours, several important East Texas producers report that they have experienced no trouble from paraffin.

Cleaning Out Paraffin By Manipulating Flow

Even with the following of the method described, however, the attainment of the exact adjustment is sometimes difficult, and a well may show signs of clogging. Close watching of pressures will usually indicate paraffin accumulation, and when such clogging appears imminent it is often possible to clean the tubing through which the oil is flowing by so regulating the valves at the well head as to cause a surging or bucking of the oil stream within the pipe, the well being "opened up" briefly to allow several of the surges or bucks, which frequently dislodge any accumulated paraffin. Various companies have found this operation very effective in forestalling paraffin clogging. One concern with numerous flowing wells in the field has experimented extensively along this line and has found that as a rule its wells which are free of paraffin accumulation show around 240 pounds or more working pressure on the tubing, and that a drop of pressure below that figure frequently signifies paraffin trouble. When the pressure declines below that point, therefore, the well is subjected to the surging or bucking action, and the operation usually causes an increase in pressure, indicating that the paraffin impediment has been removed.

If the well fails to respond properly when it is temporarily opened, the paraffin may be dislodged by reversing the flow, sending it up through the casing and out the casing head instead of through the tubing, in which operation the tubing is heated from the outside by the upward rushing hot oil, tending to break down the paraffin accumulation inside the tubing. After going through the casing for a while the flow is then changed back through the tubing. This rocking procedure has proved very effective in flushing out paraffin.

While it is suggested, as pointed out previously, that paraffin trouble in the flow lines leading from a well may be eliminated by keeping the lines full, there is nevertheless found in the field such clogging, just as clogging occurs in the wells, even if it is because of incorrect practices. It is suggested by engineers of one East Texas producing company that a convenient way to eliminate paraffin from the flow line is to blow it out occasionally with gas from the casing head of the well after the oil production of the well is shut in. Similiarly, gas from a fuel line might be used for blowing out the flow line.

In the separators there is no paraffin trouble, ordinarily, because of the agitation of crude oil in it when the well is on production. To combat the accumulation of paraffin at the bottoms of the lease tanks into which the oil is sent from the separators, it is suggested that little can be done other than to agitate the oil with gas off the separator, or to set up motion of the oil occasionally by employing pumps to circulate it within a tank or from one tank to another.

In the practice which has been suggested of keeping the lines full in an attempt to prevent the paraffin from col-

lecting, it is suggested that the desired results be accomplished by shutting the well in and immediately thereafter closing the valve on the lead line where it connects with the lease tank. In that way there is a shutting in of the surface pipe system from the well head through the separator to the stock tanks, the system being kept filled with oil until the well is placed again on production.

Whatever the reasons for the clogging may be, there are some instances in the East Texas field where wells have become so badly stopped up that it is found necessary to resort to special measures for cleaning them.

Although the use of steam has been suggested as a possible remedy for breaking down the paraffin accumulation, the method is generally regarded as too unsatisfactory and too expensive to be practicable. Various companies have obtained fair results through use of chemical compounds. A more common remedial measure, however, is the use of some form of paraffin knife.

One type of knife which is used to some extent is in the form of a scraper consisting of a joint of pipe which embodies hinge-like metal flaps on its outer walls. The scraper is run at the bottom of a wire line, which is weighted sufficiently to make the tool work properly. The scraper is spudded into the paraffin which has accumulated in the tubing. The flaps are folded back against the wall of the tool when forced into the paraffin, but they open out when the tool is pulled back out, bringing with them a section of the paraffin. Caution must be taken not to try to dislodge too much paraffin at a time, lest the tool become stuck.

A different type of paraffin cleaning knife has been improvised by one large producing company for use in its wells. In contrast with the scraper type tool, it is cylindrical in form, being made from the working barrel of a crude oil pump, and whereas the scraper type knife brings the paraffin to the surface when it is withdrawn from the well, the cylindrical type tool is hollow inside and open at the top, allowing dislodged paraffin to pass up through it and to remain in the broken up condition in the tubing. The tool is fitted below polish rods which afford added weight, and like the scraper type knife, it is run into the tubing on a wire line operated from a portable pulling machine which has been moved to the well. Incidentally, many of the East Texas operators have adopted the practice of using 94-foot combination drilling and pumping derricks, and the cleaning knife and pulling machine are handled with the aid of the derrick.

The cylindrical type knife is forced by the weight of the rods and the line into the paraffin, and when added force is needed it is picked up and spudded. The cleaning-out process may start with a small knife, for example from one inch to 1½ inches in diameter when used in 2½-inch tubing, and when some progress has been made in creating an opening of that size the original cylinder may be replaced with one of larger diameter. This improvised cleaning tool has proved particularly effective.

In addition to those which have been described, there are in use in East Texas several other types of paraffin-cleaning knives.

Use of Chemicals

Regarding the use of chemicals for combatting paraffin trouble in the East Texas field, it may be stated that several different substances have been tried with varying degrees of success.

While several different chemicals are offered on the market as aids in overcoming paraffin accumulation, most if not all of the chemicals and compounds which are employed are based upon one of two main general principles. On the one hand there is a group of products depending upon the generation of heat within the well as the means for melting and breaking down the paraffin accumulation. Aluminum caustic, for example, is a substance which reacts in the presence of water to give off heat. Other agents for generating heat include sodium hydroxide and sodium peroxide, either of which may be used with little danger, while calcium carbide also will generate heat, although it gives rise to danger because of giving off gas at the surface.

The other general principle upon which chemical treatment of paraffin accumulation is based is that of preferential wetting. Chemicals of this nature include Tret-o-lite or Paratreat made by Tretolite Company, St. Louis; a special grade of Kontol made by The Kontol Company, Dallas; and various other products. They serve to wet the inside of the walls of the tubing through which the oil is produced, sticking to the tubing but being of such nature that the paraffin will not adhere to them. Such paraffin as may precipitate consequently has a tendency to slide down the inside of the pipe rather than to accumulate in it.

While these chemicals probably do not actually dissolve the paraffin, they are effective through wetting the tubing and preventing the paraffin from accumulating. Although they aid, also, in breaking down paraffin deposits which have accumulated, according to some users, they are recommended by others who have used them as being of principal advantage in preventing the paraffin from accumulating originally, their use being preferably, according to the latter opinion, as a preventive rather than a remedial measure.

Although there may be equally well-founded opinion to the contrary, the engineers and chemists of one large producing company believe that the chemicals which may be expected to be of greatest value in East Texas in combatting paraffin trouble are those in the latter main group above discussed, namely, those involving the process of wetting the inner walls of the oil string.

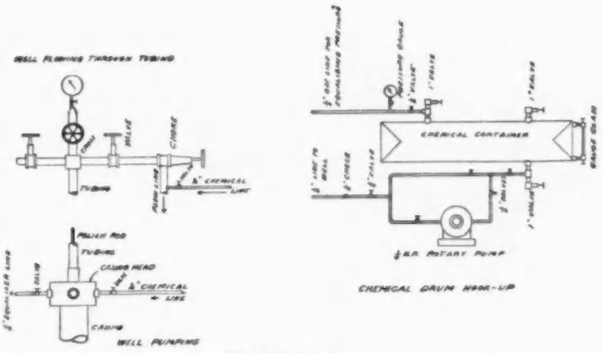


FIGURE 1
Sketch of Hook-ups for Chemical Treatment for Paraffin.

It was the latter type of chemicals to which Blaine Johnston, vice president of Simms Oil Company, Dallas, Texas, referred in a recently published article* in discussing the paraffin situation in the East Texas field. For the convenience of the reader there is reprinted herewith the illustration used by Mr. Johnson in his discussion of the chemical treatment for paraffin. "With the coming of cold weather and as more wells are put to pumping," he stated, "the trouble from the deposit of paraffin will no doubt increase greatly. The chemical treatment for the prevention of this paraffin deposit has been very successful in other fields and might prove to be so in this field also."

Referring to the mentioned illustration, Figure 1, "Sketch of Hook-Ups for Chemical Treatment for Paraffin," the author of the paper continued: "For the pumping well the

*"Correct and Incorrect Production Practices in East Texas," presented at Lufkin, Texas, before the September 24-25, 1931, meeting of the Southwest District of the American Petroleum Institute Division of Production, and published in The Oil Weekly, October 2, 1931, beginning on page 16.

chemical is introduced into the casinghead of the well and passes through the annular space between the casing and tubing to the bottom of the tubing, where, intimately mixed with the oil, it is pumped out through the tubing. If the tubing or flow line is already badly paraffined when the chemical is introduced, the paraffin is loosened and pumped out in small chunks. Thereafter while the chemical is being used it keeps the paraffin from forming and the tubing and lines clear.

"To the right of the sketch is shown a hook-up for the chemical drum. Where the chemical is not to be put in against pressure, the chemical container can be made of almost any light material. Where it is to be introduced against pressure a pup joint of old casing about seven or eight feet long, with ends and outlet collars welded as shown on the sketch, makes a satisfactory container. To the left at the top of the container is shown an equalizer line, which can be connected either to the pumping well's casinghead or to an outside pressure source to equalize or increase the pressure in the container if the chemical is being introduced against pressure, so that it will not have to buck this pressure. The outlet from the container is shown manifolded so that it can be used either as a lubricator or forced in by a small one-fourth horsepower rotary pump if electricity is available at the well. The pump method makes a satisfactory way of introducing the chemical as it can be regulated to the desired amount and makes a positive source regardless of changing weather conditions.

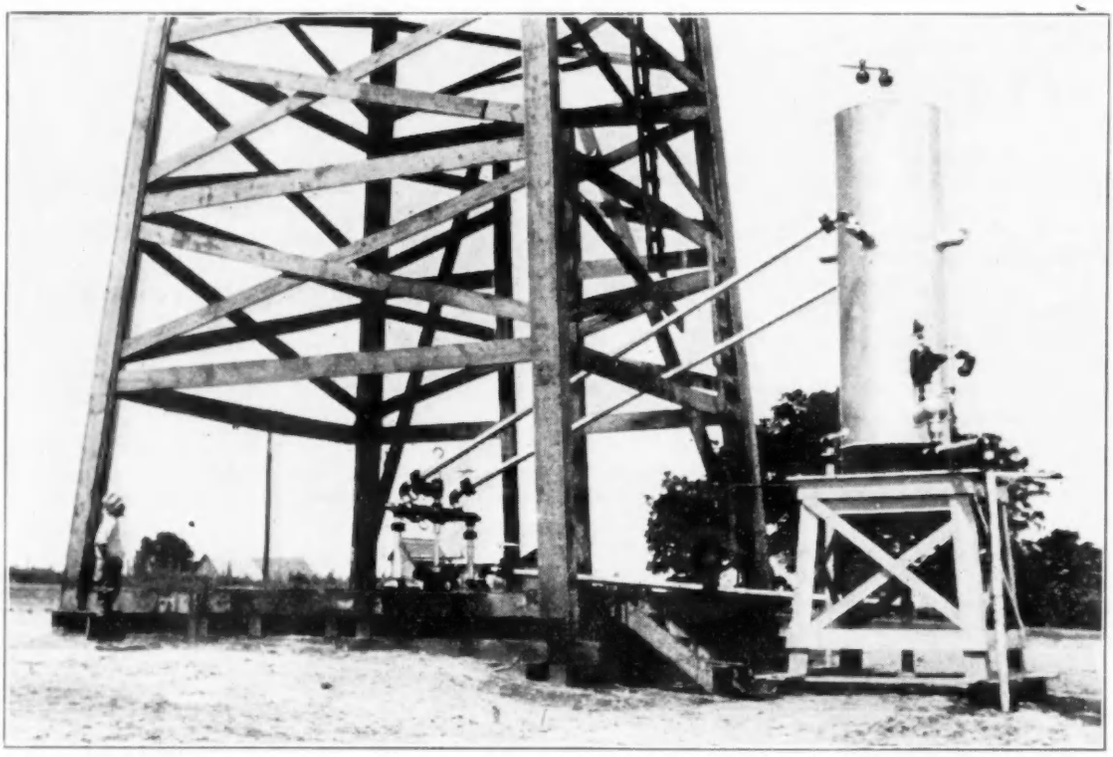
"Because of the temperature of the oil and the back pressure held on the wells, flowing wells will probably not be troubled by paraffin in the tubing. However, if they should paraffin up in the flow line between the choke and the tank, where a large part of the pressure may be released, the chemical could be put into the flow line just after the choke, as shown on the sketch. If the tubing should paraffin in a well flowing through the tubing, a small size of tubing can be run inside the flow tubing to a depth below that at which the paraffin forms. The chemical can then be forced down through this smaller tubing to mix with the oil and flow up through the large tubing, keeping it clear from paraffin."

The above recommendations, Mr. Johnson explained in a recent conversation, were based largely upon successful results obtained in the Church and Fields area, Upton County, West Texas. Simms Oil Company has not had any occasion to try the chemicals on properties in the East Texas field, it was stated, but the company has a supply of them ready for use, believing that they should prove as effective in East Texas as they have in West Texas.

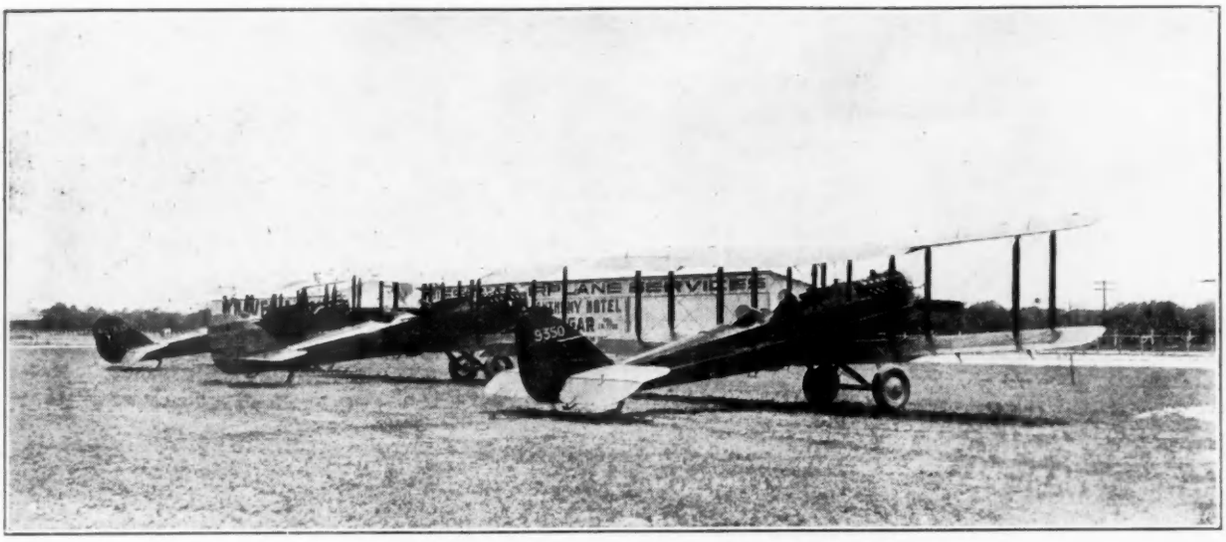
Conclusion

Some of the suggestions and conclusions which have been discussed above appear revolutionary when it is considered that many East Texas operators regard paraffin clogging as taking place at or near the bottom of the well, rather than at the top as shown by the mentioned field experimentation of one company, and since it has been common for operators to anticipate paraffin trouble in cold weather, temperature being regarded as a prime factor in the clogging, whereas some of the described experiments would indicate that vaporizing of the crude oil rather than temperature decrease is a controlling consideration.

Whatever value and accuracy they may have, the described experiments and conclusions suggest the possibilities which exist for improving present methods of dealing with paraffin trouble in oil fields, including the East Texas field. For it is apparent that the nature of paraffinic crude oil is not altogether clearly understood, and that a more definite knowledge of its properties and characteristics can lead to more effective practices in handling it and in regulating the wells from which it is produced.



One of various hook-ups of flowing wells in the East Texas field—Sinclair Oil & Gas Company's Florence Blanche Wilson 1, in west part of Joiner district.



AERIAL MAPPING PLANES

Stability is an important requirement in airplanes used in photographic mapping, and the various other essentials include sturdy landing gear to permit landing in rough country. The pilot sits in the front cockpit, and the photographer in the rear, where the special camera is mounted so as to point down vertically through an opening in the floor of the plane. This picture shows three planes of Edgar Tobin Aerial Surveys, San Antonio, Texas

Flying Equipment and Operations In Aerial Photography

By JACK LOGAN
Staff Representative

IN making aerial photographic maps a crew of two men is employed in the actual flying: the pilot whose responsibility it is to plan the course of the flight and to maintain the plane at the right altitude, and the photographer, who works back of the pilot, operating the camera, which is installed in the plane with the lens pointing downward through a hole in the bottom of the plane.

Various types of planes are used, with a high degree of stability as a prime requisite. For in order to obtain accurate aerial maps it is necessary for the plane to be as free as possible of tilting to either side and for it to fly at uniform altitude. It is advisable also that the plane be equipped with particularly sturdy landing gear and tires, as it is frequently necessary that it be landed in rough country.

Different aerial surveying companies use different types of cameras. Some of the cameras which are employed are operated entirely by hand, very much as an ordinary kodak is handled, while others embody certain automatic features, such as instruments for controlling the time interval between exposures. When the latter automatic feature is not employed there is provided in the floor of the ship a view finder calibrated to the coverage of the negative, through which the photographer watches the ground below, regulating the making of exposures by watching the ground which is being traversed. He can see ahead, and when a certain point is reached a negative is exposed. The camera can be tilted in any direction, being mounted upon a support which operates similarly to the universal joint of an automobile, a special level indicating when the camera is pointing down in truly vertical position.

The lens of the aerial camera must be very fast so that the speed of the plane will not result in blurring of the photograph. Films are more commonly used than glass plates. The rolls of films present the appearance of ordinary kodak films except that they are larger, the width of the film being slightly over nine inches, so as to give pictures nine inches wide and seven inches high. There are 110 exposures to each roll of film, the roll being 75 feet long, and in thorough, detailed work each film is sufficient for photographing about 65 square miles of ground. Three rolls of film are commonly used in a single flight, about 3½ to four hours being required for making all the exposures, and about 200 square miles of territory having been surveyed in the meantime.

It is necessary for best results that the film be highly sensitive to colors, so that changes in vegetation and in colors of soil may show up on the pictures. In making maps for use of geologists it is particularly important for

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Courtesy Fairchild Aerial Surveys, Incorporated

AERIAL CAMERA MOUNTED IN PLANE

Various types of planes and cameras are used for making aerial photographic maps. This assembly shows the Fairchild military type, fully automatic aerial camera mounted in a Fairchild plane

the variations in color to be brought out. An instance has been cited in which an aerial photograph was taken of an ancient Roman town in England showing clearly the outline of the old buildings and streets, although the objects shown were completely covered over with earth, while standing barley was growing over the site. The buried material affected the soil and the vegetation, bringing about color changes, and those effects were recorded on the photographs.

In order to obtain an aerial map on any given scale with a particular lens, it is necessary that the plane be flown at a definite elevation. The scale of the negative (ratio of inches on the negative to feet on the ground) is equal to the ratio between the focal length of the lens (in inches) and the height of the lens above the ground (in feet). Thus a camera with a lens having focal length of 12 inches, set in a plane at an altitude of 12,000 feet above the ground, reproduces the ground upon the negative on such scale that 12 inches of picture equals 12,000 feet of ground, or one inch equals 1000 feet. If it is decided that an area is to be mapped on a scale of one inch equals 1500 feet and a lens with focal length of eight inches is to be used, therefore, a simple arithmetical proportion reveals that the plane must be flown at a height of 12,000 feet. Incidentally, the latter figures represent rather common practice in oil field aerial surveying, the plane maintaining height of 12,000 feet and affording pictures on scale of 1500 feet to the inch. Instead of lenses with eight-inch focal length, however, those with focal length of 12 inches are also common, affording pictures on a scale of one-inch equals one-fourth mile (1320 feet) when flown at an altitude of 15,840 feet. In each of the above instances a single photograph or exposure of the roll of film represents a stretch of country somewhat over two miles wide, the picture being nine inches wide.

Aside from affording pictures of convenient scale with the customary lenses, the flying of the plane at an altitude of about 12,000 feet is also found satisfactory and practicable from the standpoint of favorable flying conditions. At altitudes less than 10,000 feet rough air is frequently encountered, causing sudden dropping or tilting of the plane and distortion of the pictures; while at altitudes greater than 15,000 feet low temperatures and other undesirable conditions are often found.

The importance of maintaining the plane uniformly at the altitude which has been decided upon is self-evident. If it falls below that height the scale of the picture is enlarged, and the photograph does not fit into the mosaic accurately. To aid him in maintaining the correct elevation the pilot has available an altimeter, a recording instrument with which planes are commonly equipped. Improved altimeters record changes of as little as five to 10 feet in altitude. Such changes in altitude as may occur are ordinarily negligible in so far as they are reflected upon the aerial pictures, but where they are of such large magnitude as to materially affect the scale of the picture a correction of scale may be effected through rephotographing of the picture in the laboratory in working up the mosaic. Similarly, when the plane in flying over the ground tilts sufficiently to distort the photograph it may be necessary to rework the picture in the laboratory by rephotographing it or else to use as little of it as possible, having adjacent exposures overlap it to considerable extent in building up the mosaic. A special device has been developed after considerable work and experimentation, by means of which pictures can be rephotographed so as to largely correct the distortion due to tilting of the camera away from the vertical. The photographer can ordinarily, however, keep the pictures free of the distortion due to tilting by taking care to keep the camera level when each exposure is made, level bubbles

aiding him in that precaution. Only a few degrees of tilt will distort the scale of the picture materially.

Planning and Executing the Flight

The varying requirements for aerial mosaics result, naturally, in jobs of different sizes for the aerial photographing companies and consequently in different plans for carrying out the flights. Having ascertained what area is to be included in the pictures the pilot outlines the territory upon a reliable key map, and he then plots upon the key map the parallel lines along which he will fly, back and forth.

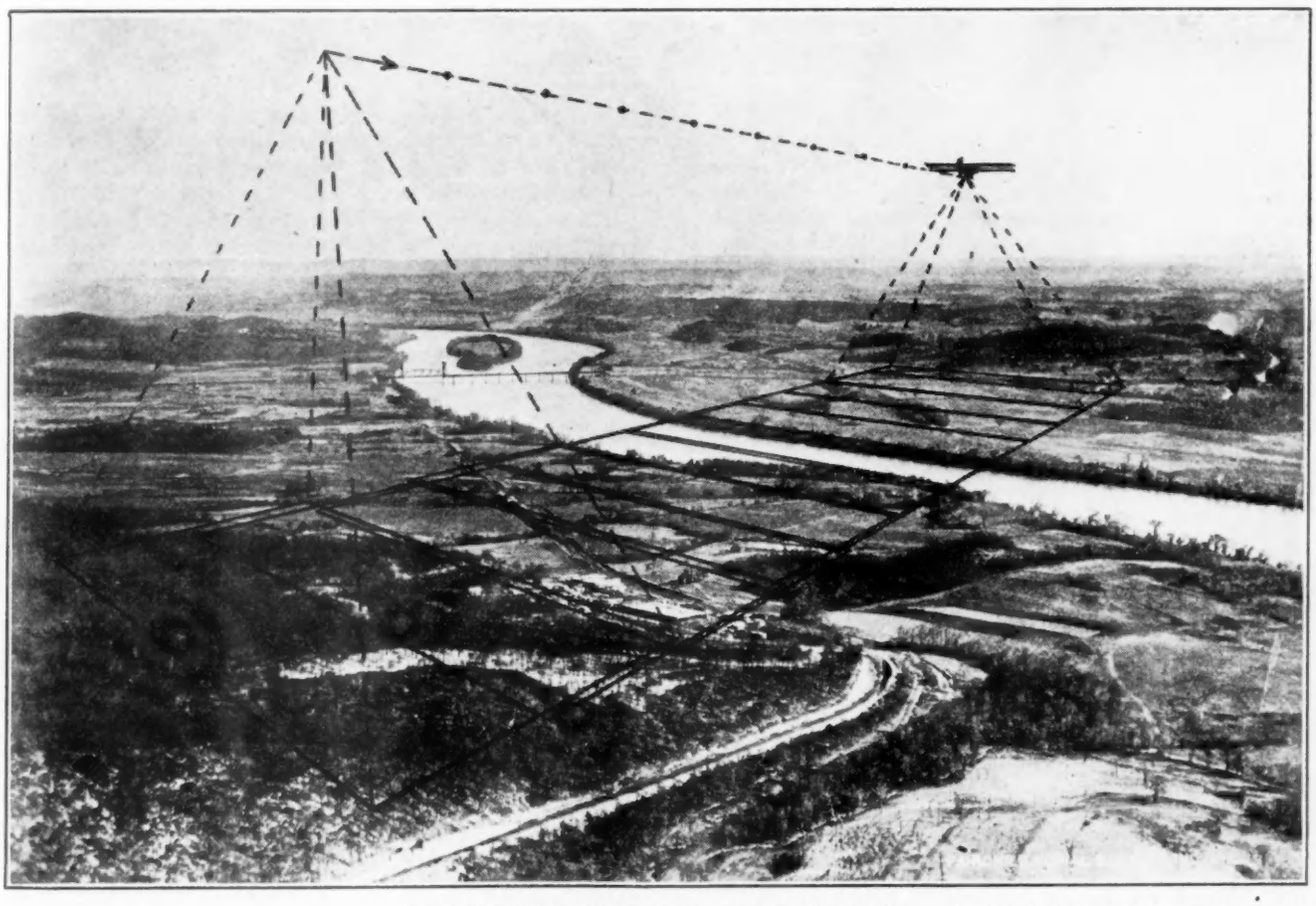
The amount of territory, of course, determines the amount of film needed, a single roll having capacity, as stated previously, of picturing about 65 square miles of land at a scale of one inch equals 1500 feet. The maximum area included in any single flight is usually about 200 square miles, or that photographed with three of the 75-foot rolls of film. In making such a flight an average period of about 4½ hours is required, including 3½ to four hours of actual photographic work.

As the key map the pilot uses the best map of the area which is available for the particular requirements on the project. In some instances reliable county maps can be used, with railroads, highways or streams serving as identification aids. But in many instances, particularly on large projects, United States Geological Survey 15- minute quadrangles are employed as the base maps upon which the pilot plots his flights, and the same government maps serve also in laboratories as base maps upon which to build the mosaics. These quadrangles or atlas sheets published by the United States Geological Survey comprise tracts of country measuring 15 minutes in latitude by 15 minutes in longitude, being mapped on the scale of 1 to 62,500.

In much of its work one of the aerial photography companies, Edgar Tobin Aerial Surveys, San Antonio, follows the practice of taking one of those 15-minute quadrangle sheets and dividing it into four equal parts, each being approximately 8½ miles long (north and south) by 7½ miles wide (east and west) for the South Texas region. In a full 4½-hour flight in which three rolls of film are exposed the crew can ordinarily fly over three of those 7½-mile by 8½-mile units. Flying at 12,000 feet and using a lens giving pictures on a scale of 1500 feet to the inch, a common practice in detailed work, the crew uses about one roll of film for each of the 7½ by 8½-mile units.

During the flight the photographer times the consecutive exposures so that they overlap, each upon the previous one, like shingles, the amount of overlap being usually about 60 per cent. The pilot in plotting his parallel lines of flight and subsequently in following those lines in the air provides for overlapping of the parallel strips of pictures by about 50 per cent. In flying over the above mentioned unit of 7½ miles by 8½ miles, therefore, about seven separate strips of pictures are photographed, each strip comprising about 15 pictures.

The overlapping of the pictures, both north-south and east-west, makes it possible in building up the mosaic to use only the central portion of each photograph, which is in true vertical projection; and consequently the scale of any part of the moasic is identical with the scale of any



OVERLAPPING OF AERIAL PHOTOGRAPHS Courtesy Fairchild Aerial Surveys, Incorporated

The lines drawn upon this photograph illustrate how the camera pointing down vertically through an opening in the floor of the airplane makes pictures of the earth at regular intervals in such manner that each picture overlaps the one which was previously made by about 50 per cent, much as shingles on a roof overlap each other. By virtue of the overlapping it is possible to use only the central portions of the different pictures, those portions being in vertical projection and therefore being upon a strictly uniform scale

Courtesy Fairchild Aerial Surveys, Incorporated

AN AERIAL PHOTOGRAPHIC MOSAIC PARTIALLY LAID

The partially assembled master mosaic which is shown here represents an aerial photographic map of the city of Hartford, Connecticut, in the making. About one-half of the composition board base has been covered by the aerial photographs. The map builder is shown placing a photographic print in its proper place. The white lines in the foreground, drawn upon the composition board with crayon, are control lines which guide the worker in laying the pictures. On the lower right corner of the board, for instance, is a line showing a railroad. Tracing it diagonally toward the upper left corner of the board, it is seen that the railroad line control continues on the photographic map. The courses of the main thoroughfares, likewise, may readily be traced along the white lines and on into the assembled photographs

other part. Another advantage is offered through the overlapping by virtue of the possibility of using two overlapping pictures together under a stereoscope, by which means relief is added to the photographed ground. The stereoscope adds life and naturalness to the pictures, just as the old fashioned stereoscopes which formerly could be found in many homes worked magical transformation upon the stereoscopic pictures which were used in connection with the glasses.

An achievement which has been made in aerial photographic mapping is the introduction of methods and plans of surveying by which the maps are made geodetically correct. In other words, in the compilation of the maps the surveys take into account the curvature of the earth, as do the governmental surveys of states or of long lines of coast. When large areas are involved in an aerial survey, as in certain regional geological work, it is materially important that the maps be geodetically correct. In the employment of geodetic control the firm of Edgar Tobin Aerial Surveys has taken the role of a pioneer, having surveyed approximately 30,000 square miles in South Texas in that manner and having adopted the method as standard practice in most of its regional work. Under the system the boundaries of the aerial surveys have the value of geodetic base lines, and any mosaic covering any given area will not only be correct from the standpoint of that particular unit; it will also be correct in relation to any other geodetically controlled mosaic whether the latter be immediately adjacent or many miles removed.

In practice the geodetic control is secured by tying the aerial mosaics in accurately to the geodetic base lines. Those base lines have been located by the federal government through astronomical observations, and where the observations were made there were placed bench marks which can be found on the ground. In making the aerial mosaics such astronomically located stakes or markers are actually found on the ground, and they are then identified on the aerial pictures. Other such bench marks in different portions of the area under survey are similarly identified on the aerial pictures; and finally making up the mosaic upon a government base map the pictures are so laid that all bench marks which have been identified in the pictures must fall exactly upon their locations on the base map. The whole mosaic is therefore accurate with respect to the geodetic base lines. Any two adjacent mosaics, conse-

Courtesy Fairchild Aerial Surveys, Incorporated

STEREOSCOPE FOR STUDYING AERIAL MAPS

By means of this special stereoscope, an instrument embodying a system of mirrors, an area shown on two adjacent and overlapping aerial photographs appears in third dimension or in relief, the hills, trees, and houses seeming to project upward from the face of the photograph, and valleys, ravines, and ditches showing as depressions

quently, will fit exactly into each other, and mosaics of widely separated areas can be tied in with each other without any discrepancies through filling in the intervening space with geodetically controlled mosaics of that land. Since each individual mosaic is geodetically correct, making the proper allowance for the curvature of the earth, any mosaic may serve a general purpose as well as the specific purpose for which it is made. After it has served its immediate purpose it may be filed away and when other mosaics of adjacent territory have accumulated, the individual surveys may be combined to result in a large regional mosaic. Eventually the aerial pictures cover a wide expanse of territory, correct from end to end.

Proper Flying Conditions

It is needless to say that excellence of workmanship in aerial photography demands experience on the part of the pilot and the photographer. Through experience the pilot learns to "find himself" readily over the ground that is to be surveyed and to execute his plans, and experience helps him to sense even without aid of instruments whether or not the plane is maintaining an even and straight course. Likewise, the photographer gains proficiency as he becomes more experienced.

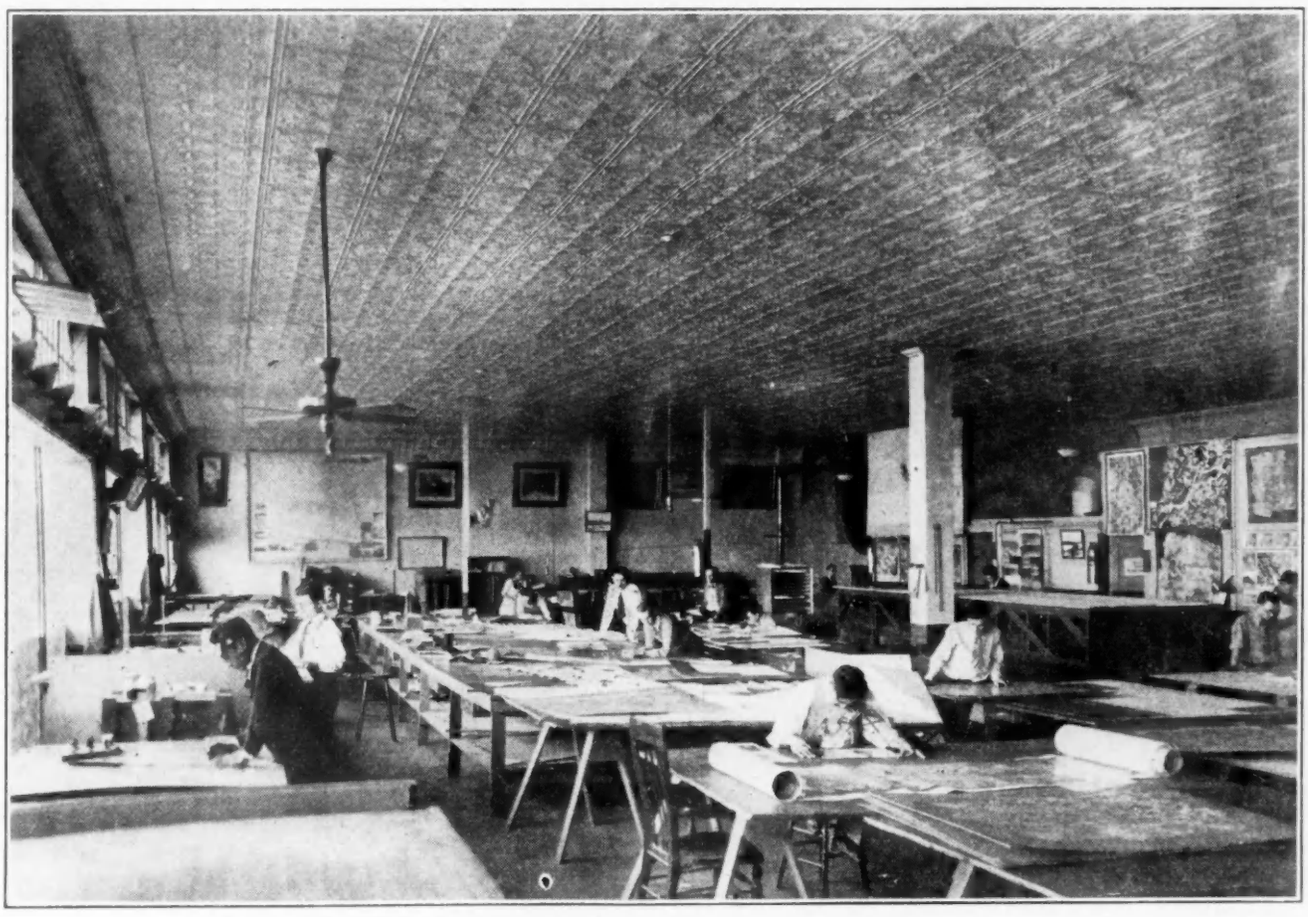
Aside from their own skill, however, the results which they obtain are dependent upon certain conditions of nature and the elements. Sometimes they must wait for days for the clear, sunny weather which is needed. It is surprising how rare a clear day with blue skies really is, even in relatively arid regions, and in the spring and summer months. Even when the sun appears to be shining brightly, frequently, one can study the heavens and the horizons and detect a grayness of the skies or small white clouds which would interfere with successful aerial photography.

Even on ideal, cloudless days the purpose for which the mosaic is to be used may necessitate the making of the flight at particular hours of the day, so that the aerial pictures will have shadows or be free of shadows. In certain types of work, as in geological work where all possible details are to be included, it is desirable that the pictures be taken while the sun is high in the heavens, shining directly down upon the earth. Shadows tend, however to add to the naturalness of the mosaic, and to aid in giving the pictures perspective, and for some purposes those qualities are desired, making it advisable for the pictures to be made in the morning or afternoon, when the sun is not vertically overhead.

Although aerial photography had received limited application before the World War its first extensive use and development took place during the war, and aerial surveying today holds an important place in the military service. It was in the governmental service that some of the men now engaged in commercial aerial photography gained their first professional experience.

Handling of Film in Laboratory

After the pilot and photographer have completed their flight and brought the exposed films to the laboratory of the aerial surveying company, the film is developed as in



AERIAL SURVEYING COMPANY LABORATORY

An important part of the work involved in making a photographic map is carried out in the laboratory after the pilot and photographer have completed their flight. The numerous laboratory operations require skillful and exacting workmanship and clear understanding of the scientific principles involved. This illustration shows the large, well equipped laboratory of Edgar Tobin Aerial Surveys, San Antonio, Texas

other photographic work. It is dried on a large cylindrical skeleton framework which may be revolved at will, and each exposure or negative is then marked by a special worker, who prints upon it data which he takes from card records of the flight furnished by the photographer. Each negative is marked with the company's serial number of the film roll, the number of the strip (each roll comprising around seven of the strips representing the parallel lines flown by the plane), and the number of the exposure (each roll of film having exposures numbering from one to 110). The photographer's card records also contain additional information which is not transferred to the negative, and those cards are filed. They list the date and time of the day at which the pictures were taken, the time of exposure, description of the lens, height from which taken, and other pertinent data.

The negatives are next printed as in the printing of kodak pictures, the finished copies being known as "contact prints," inasmuch as they are printed in direct contact with the original negatives. These prints may vary slightly in scale considering all the individual pictures which are to go into the making of the mosaic, the variation being due to the previously mentioned difficulty in maintaining the plane at exactly the desired altitude in making the different exposures or to pronounced topographic relief of the ground surveyed.

"Approximate" or "Rough" Mosaic

The contact prints may be used in the above form in field work or in connection with a stereoscope. Whether or not they are to be used directly without checking and corrections in the laying of the mosaic to represent the whole area involved in the aerial survey is a question to be determined by the accuracy required in the survey. For many of the more common uses absolute correctness is not necessary, and sufficient accuracy is afforded by direct assembly of the contact prints into an "approximate" or "rough" master mosaic, which serves the practical purposes for which it is needed although the scale may be in error by as much as about three per cent. A mosaic of this kind may be completed in much less time and at materially smaller expense than the "controlled" mosaic, which involves correction of scale of the mosaic by checking the pictures against known or measured ground distances.

In building up the approximate or rough master mosaic the individual contact prints are pasted upon a sheet of stiff composition board the size of the desired map. The position of each print with respect to other prints is determined by matching identical points or objects, such as highways or rivers, on the adjacent pictures, the key numbers which were printed on the negatives being basic guides as to general arrangement of the pictures.

By virtue of the previously mentioned overlap it is possible to use only the central portion of each picture, tearing or cutting off, or covering up approximately three-fourths of the print, but leaving the central one-fourth which is in vertical projection and which is therefore relatively free of error. The approximate mosaic satisfactorily meets the requirements of pipe line surveying, reconnaisance work by geologists or geophysicists, or other general uses.

"Controlled" Mosaic

The approximate mosaic, however, is only relatively accurate, since it embodies certain errors inherent in airplane pictures; and as the area which it covers is enlarged, the inaccuracy in matching the prints increases, the errors accumulating from one print to the next. A method of control is consequently needed, particularly if the requirements of the mosaic are exacting, as in certain special uses of engineers, geophysicists, or geologists, or when the mosaic

CLOUDS INTERFERE WITH AERIAL MAPPING

Great shadows cast upon the earth by clouds make aerial maps unsatisfactory, and the pilot and photographer must wait until the skies have cleared to carry out their work. This illustration shows a plane of Edgar Tobin Aerial Surveys, San Antonio, Texas, as photographed from another airship of the same company, the scene being in Kansas

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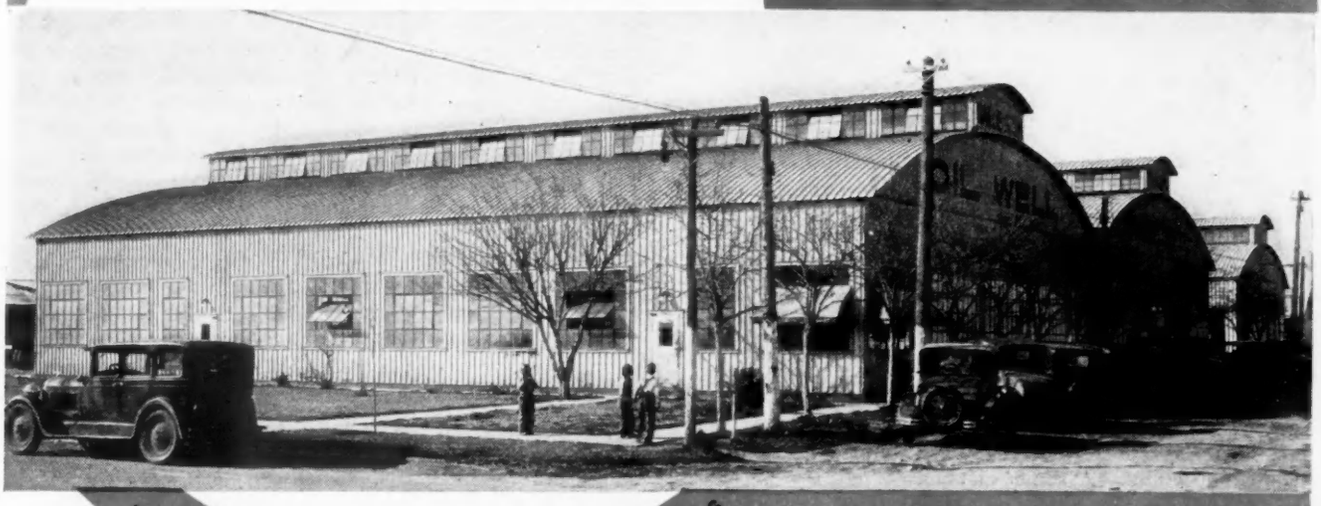
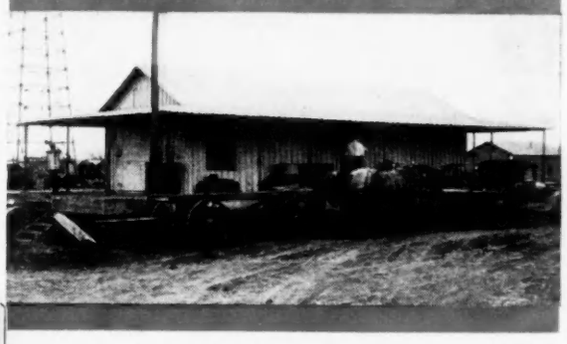


THE STANDARD OF OIL INDUSTRY STRUCTURES



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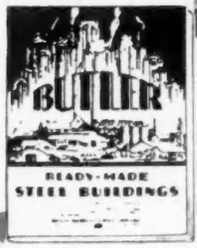

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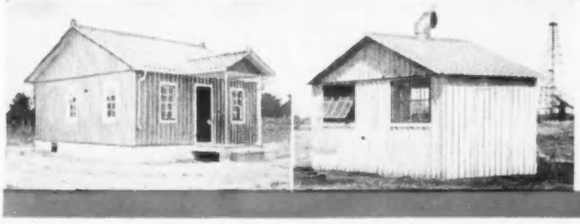

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Such a method of control is achieved through laying a controlled mosaic instead of the approximate mosaic. The controlled mosaic involves correction of the errors of scale and shape of the aerial pictures so that they will fit accurately upon a base map which is known to be correct through actual ground measurements. As in the laying of the approximate mosaic, the building up of the controlled mosaic is carried out on a piece of stiff paper composition board the size of the desired map. Upon that base are drawn in with pencil or crayon the lines representing the ground control, and consisting of triangulation points, highways, railroads, river beds, or other data taken from government maps, field notes, railroad or highway maps, or other reliable sources.

Points on the ground control may then be identified on the aerial pictures, and after proper corrections are made in the prints the pictures are cemented down upon the base so that the identification lines on the prints coincide with the ground control lines on the base map. The controlled mosaic is built, therefore, with the triangulation points and the control lines as the starting places. Intermediate pictures are corrected in scale or shape to conform with the corrections which have been made in the prints covering the control points. These prints which are employed in making the controlled mosaic are known as "rectified" prints, as distinguished from the contact prints used for the approximate mosaics. The corrected prints are made in a projection printing machine instead of on a contact printer. In some instances the only correction necessary is in the scale, and the corrected print is simply an enlargement or a redution from the original negative. In other instances, however, it may be necessary to change the shape of the picture because of its having been exposed over exceptionally rugged territory or with the camera not in true vertical position.

One aerial surveying company has explained that it makes the corrections of pictures for the controlled mosaic in the following manner. The ratio of accuracy of a contact print is determined by taking every fifth print in each strip and picking out on it two known ground distances. With those distances as accuracy control the ratio of error on the print is figured and corrected by rephotographing to scale. The exposures between the successive fifth prints with the control data are then rephotographed to conform with the corrected scale.

Two Chief Errors

The errors in aerial pictures which give rise to the necessity for corrected prints and controlled mosaics may be grouped under two classifications, (1) inaccuracy of scale, and (2) distortion. The principal cause for error of scale of aerial negatives is change of altitude of the camera and plane during photographing of the different views, a lowering of the camera resulting in an increase of the scale and a lifting of the camera making the scale smaller. This error in scale is relatively easy to correct, requiring simply an enlargement or reduction of the size of the original negative. The scale of an aerial picture may also be in error due to shrinkage in making the print in the laboratory. But such shrinkage is ordinarily uniform for all the prints, and allowance may be made for it in advance of the laying of the mosaic.

Although corrections for either scale or distortion involve rephotographing of the original negative, the correction for distortion is much more serious and difficult. The distortion of the picture may be due to either or both of two conditions, (1) tilt of the camera away from the true vertical position during exposure of the negative, and (2) pronounced ruggedness or irregularity of topography of the country surveyed.

When the camera is tilted the plane of the negative is inclined as related to the plane of the earth instead of being parallel with it, resulting in a variable scale of the negative. A simple illustration of the difference between a picture without tilt and with tilt would be offered by two kodak pictures of a stationary railroad freight train taken at very close range, the camera pointing directly toward one of the cars in one instance, and being tilted to one side to photograph a group of cars in the other case. In the first example the picture would include a smaller portion of the train, but the scale would be practically uniform for the whole picture. In the other instance, with the camera pointed off to one side, a greater portion of the train would appear in the picture, but there would be no uniformity of scale: on one end of the picture the train would occupy the full height of the photograph, while on the other end there would be enough room not only for the train but also for sky above the cars and ground beneath them. When an aerial picture is in error only slightly because of tilt the picture may sometimes be used by employing a more limited part of the exposure in laying the mosaic and using greater portions of adjacent exposures. But when the tilt is of serious proportion it must be corrected before the picture can be used. The method which is used for correcting the tilt involves changing the shape of the negative in a projection machine or rectifying printer, in which the negative and the paper carrier are each tilted relative to the principal axis of the projection lens. Each negative which was exposed with the camera tilted must be reproduced in this manner, and much painstaking work may be required for complete correction of the survey.

While the second type of distortion mentioned above, that due to irregular topography, is as serious in principle as the distortion due to tilting of the camera, it is of less serious nature in usual practice. Ordinary differences in topographic elevation are not of material importance, and it is only where the country is extremely rugged that the resulting errors must be contended with in laying the mosaic.

Controlled Mosaic Accurate

The controlled mosaic, laid upon the ground control system, and made up of pictures corrected for scale and distortion, is sufficiently accurate to meet the more exacting requirements of the oil industry, its error in fairly level areas being ordinarily only about one-half of one per cent and seldom exceeding one per cent, on distances over one-half mile, while in mountainous regions, such accuracy is possible, but at cost greater than ordinarily is justified. Even the approximate mosaic, which was previously described, is usually not in error by more than about three per cent.

The size of the master mosaic, whether it be an approximate mosaic or a controlled mosaic, will depend, of course, upon the area which it includes and the scale of the pictures. In the common instance which has previously been cited in which the pictures are upon a scale of 1500 feet to the inch a single roll of film, affording about 100 pictures, is consumed in surveying an area 7½ miles by 8½ miles in extent. Such an exposed film roll frequently constitutes the basis for a full master mosaic, the size of the mosaic being about 29 inches by 26 inches. Following a flight in which three rolls of film are exposed, therefore, three such mosaics might be built from the pictures taken on the flight.

The master mosaic is generally retained by the aerial surveying company, and the maps that are delivered to the client for whom the survey is made are built from "copy

(*Continued on page* 59)

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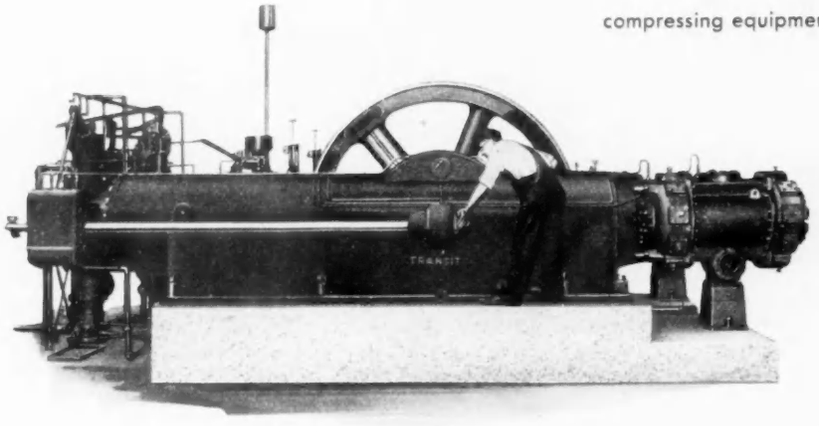

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(*Continued from page* 15)

wing of the Shell company in the United States and his work in that capacity stamps him as something more than a man with the ability to sell petroleum products. He was successful in working out the many difficulties that beset Pacific Coast marketing practices in the past two years.

Other than the introduction of Mr. Gallagher, the officials run true to expectations. H. F. Sinclair, chairman of the board of Sinclair Consolidated Oil Corporation, takes the position of chairman of the executive committee of the new concern. In the Mid-Continent Mr. Sinclair is often referred to as the Kansas boy who cut his path through the Mid-Continent and went to New York to stay at the top. Sinclair was employed in an Independence drug store when the petroleum industry was getting under way in the Mid-Continent. He operated as a producer in Oklahoma and was once in partnership with Pat White who died last year at his home in Shreveport. Properties acquired and developed as an independent operator were used as the nucleus around which Sinclair Consolidated Oil Corporation was formed in 1919.

W. S. Fitzpatrick, vice president of the executive committee, is the only Prairie man on the list of officials thus far announced. He became chairman of the board of Prairie Oil & Gas Company in 1923, upon the resignation of James E. O'Neill. Previously he had been president and had worked his way to the top of the Prairie organization from the ranks. Fitzpatrick has been responsible for a great share of the good will, which Prairie Oil & Gas Company enjoys in the Mid-Continent.

E. W. Sinclair, chairman of the finance committee, was president of Sinclair Consolidated Oil Corporation. Until his move into this post, he was president of Exchange National Bank of Tulsa, an institution known as "the Sinclair bank." E. W. Sinclair is best known in financial circles as related to the petroleum industry. He is a brother of H. F. Sinclair and the two have shaped the Sinclair policy.

The directorate announced is temporary to stand pending official revision. The 25 oil executives and financiers, who comprise this board, reveal a majority from the Sinclair ranks. The list, with previous affiliations in the petroleum industry follows:

P. D. C. Ball, St. Louis sportsman and financier, owner of the St. Louis Browns.

F. H. Bartlett.

J. W. Carnes, Sinclair director.

Sheldon Clark, Sinclair vice president, refining executive.

R. L. Clarkson, Sinclair director.

C. E. Crawley, Sinclair vice president, went up from Tulsa with H. F. Sinclair.

Arthur W. Cutten, Chicago grain speculator, substantial stockholder in Sinclair Consolidated Oil Corporation.

J. Fletcher Farrell, Sinclair vice president.

W. S. Fitzpatrick, Prairie, chairman of the board.

Clark H. Kountz, president, Prairie Pipe Line Company.

Samuel L. Fuller, Sinclair director.

Dana H. Kelsey, Prairie vice president and general manager.

George McDonald.

Nelson K. Moody, president, Prairie Oil & Gas Company.

William H. Phillips, Sinclair director.

Harry H. Rogers, chairman of the board, Exchange National Bank, Tulsa.

E. W. and H. F. Sinclair, over from the Sinclair concern.

George H. Taber, Jr., Sinclair director.

E. V. R. Thayer, Sinclair director.

P. W. Thirtle, Sinclair director.

E. R. Tinker, Sinclair director, also director of Prairie Pipe Line Company.

Alvin Untermeyer.

Elish Walker, Blair & Company, which formed Petroleum Securities Corporation of America, director of Prairie Oil & Gas Company.

A. E. Watts, Sinclair vice president, who was umpire of the Cushing pool, when it was breaking the market back in the days before the World War.

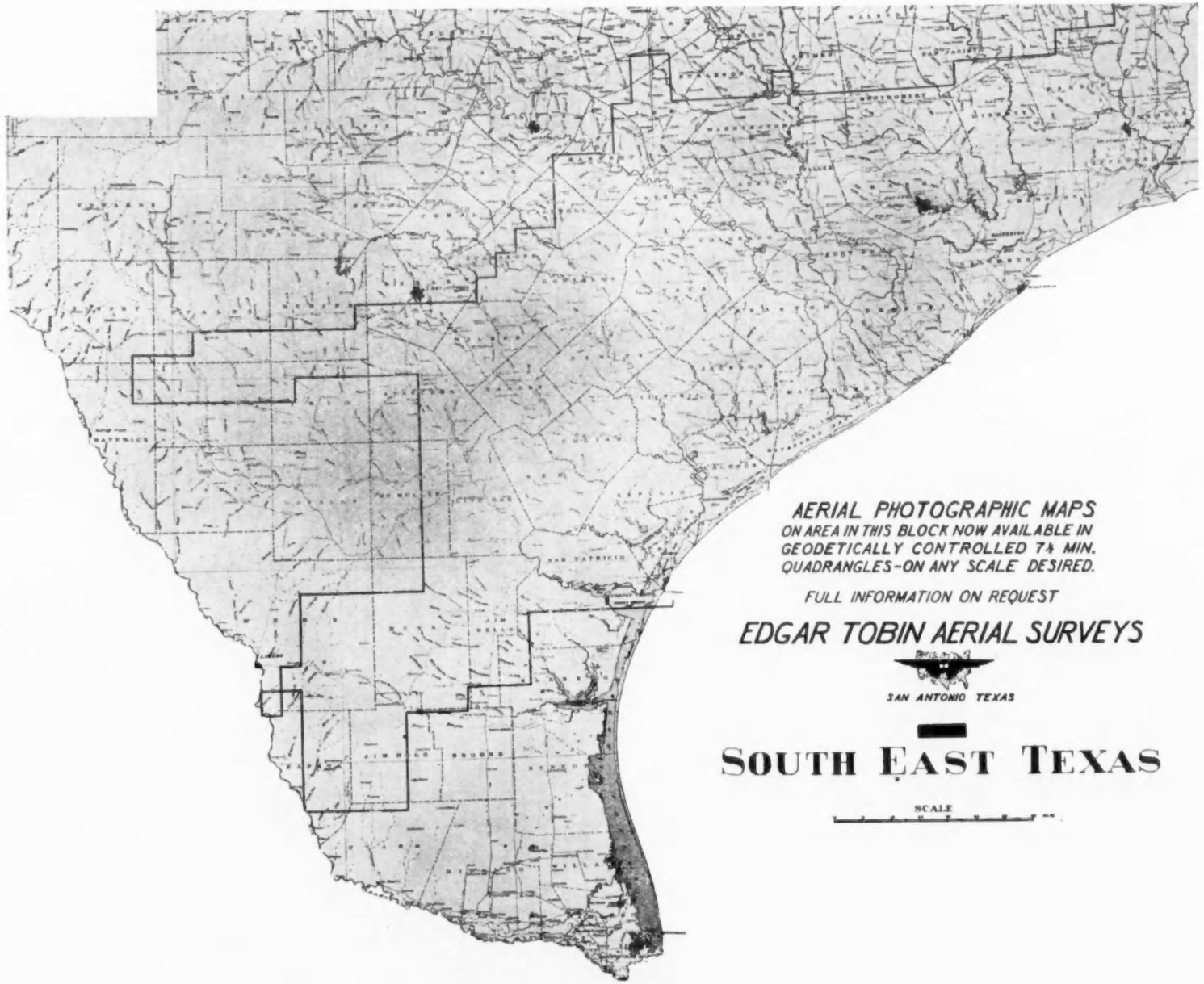
While this directorate includes names of men well known in petroleum circles and is extensive in numbers, it still lacks a few names which the petroleum industry expected to see when the merger came into reality. John H. Markam, Jr., of Tulsa, is one. There was talk that Markham would be president of the merged concern. He is president of Petroleum Securities Corporation of America and a director of Prairie Pipe Line Company. Petroleum Securities

On Board of Consolidated Oil Corporation

E. W. Sinclair
President, Sinclair Consolidated Oil Corporation

Dana H. Kelsey
Vice President and General Manager, Prairie Oil & Gas Company

Nelson K. Moody
President, Prairie Oil & Gas Company


AERIAL PHOTOGRAPHIC MAPS
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SAN ANTONIO TEXAS
SOUTH EAST TEXAS
SCALE

Corporation is generally credited with having brought the three concerns together. It is an extensive holder of both Prairie and Sinclair stocks, as well as stocks of other oil concerns. It is a product of Blair & Company and the presence of Elish Walker on the board is causing many to consider the merger strictly a financial affair with officials and directors to be changed until the list finally pleases the banking group.

As for operating headquarters of the new concern, any real estate dealer in Tulsa will tell you today that the Exchange Tower will house all offices before the middle of the year. But there has been no announcement to this effect although Tulsa is looked upon as the favored place for headquarters. Sinclair owns a building in Tulsa and the producing subsidiary, Sinclair Oil & Gas Company makes headquarters in Tulsa. Although headquarters of both Prairie concerns are in Independence, Kansas, each has extensive offices in Tulsa.

Merger of the Prairie and Sinclair concerns brings together two staffs of competent operating personnel. Nothing toward welding these into one organization is likely to be done prior to final approval of the merger by stockholders.

Prairie Outstanding Producer

Prairie Oil & Gas Company is looked upon as one of the outstanding producing concerns of the world. Its lifting costs in the Mid-Continent area are the lowest for the petroleum industry. This concern still has its full personnel. Its activities have been reduced through adherence to proration measures and also by its withdrawal as a crude oil purchaser a year ago. But the personnel of the concern has not been reduced. It is one of the few oil concerns which still retains its full personnel and is maintaining its salary and wage schedule of two years ago.

Two years ago the total production of Prairie Oil & Gas Company and its subsidiaries was in excess of 100,000 barrels daily. Since then other production has been added. Actual production has been cut back through proration. Its stored oil is the largest in the Mid-Continent, being listed as 50,000,000 barrels.

The Sinclair group does not have as extensive holdings of leases as does the Prairie, but its activities of the past year, especially in East Texas and previously at Oklahoma City, have been more pronounced than Prairie. Sinclair production would be in excess of 100,000 barrels daily if its wells could be opened to capacity.

Sinclair plants have combined refining and cracking capacity of 266,500 barrels daily. Crude oil charging capacity is 166,500 barrels daily through nine active plants and the remainder is cracking capacity.

World's Largest Pipe Line System

Pipe line facilities through lines of Prairie Pipe Line Company and Sinclair-Texas Pipe Line Company will give the new concern the world's most extensive crude oil carrier system. It extends from Smith's Bluff, Texas, to East Chicago, Indiana, as well as East St. Louis. All Mid-Continent fields as well as the Texas Panhandle are served by this pipe line system. The trunk line system is 5784 miles and 7403 miles of gathering lines. This system serves some 90,000 oil wells and it could collect around 500,000 barrels daily. Trunk lines could deliver 225,000 barrels daily.

Sinclair Refining Company will furnish the major part of sales facilities for the new concern. Bulk plants and service stations are located throughout the United States from the Rocky Mountain area to the Atlantic seaboard. Marketing is done in Canada as well as through European subsidiaries. Through Producers & Refiners Corporation, a controlled subsidiary, Prairie Oil & Gas Company brings a limited number of bulk and retail outlets. During the past year Prairie also bought some sales concerns in Kansas.

Selection of H. R. Gallagher as president and operating official would indicate that Consolidated Oil Corporation will become a vital factor in retail and wholesale distribution of petroleum products. His recent work in the petroleum industry has been restricted largely to selling.

Consolidated Will Have Refinery Capacity of 203,000 Barrels Daily

Houston.—Refining capacity totaling 203,000 barrels is involved in the Sinclair-Prairie merger. Prairie Oil & Gas Company is not classed as a refining organization but through acquisition of controlling interest in Producers & Refiners Corporation controls 14,000 barrels of refining capacity.

Sinclair Refining Company operates nine refineries with a total capacity of 189,000 barrels for running crude oil and cracking capacity of 99,000 barrels. In addition the company has two shut down plants with 6200 barrels crude capacity and the Sinclair Refining Company of Louisiana owns a 30,000-barrel refinery at Meraux, Louisiana, inoperative for several years, and recently figuring in merger rumors with the Tex-York Utilities Corporation, headed by Count Ivan L. Leschinsky. The combination of the two companies will bring the new organization's refining capacity to 203,000 barrels, with a cracking capacity of 105,000 barrels.

List of Plants

Following is a list of refineries owned by the Sinclair organization:

Sinclair Refining Company—	Crude Capacity	Cracking Capacity
East Chicago, Indiana	40,000	35,000
Coffeyville, Kansas	10,000	10,000
Kansas City, Kansas	8,000	10,000
Fort Worth, Texas	8,000	.....
Wellsville, New York	20,000	.....
Gladewater, Texas	2,500	.....
Houston, Texas	50,000	30,000
Marcus Hook, Pennsylvania	20,000	10,000
Sand Springs, Oklaham	8,000	4,000
Plants not in operation—		
Muskogee, Oklahoma	1,200	.....
Texas City, Texas	5,000	.....
Sinclair Refining Company of La.		
Mereaux, Louisiana	30,000	

The Producers and Refiners Corporation, controlled by Prairie Oil & Gas Company owns refineries as follows:

Producers and Refiners Corporation—		
West Tulsa, Oklahoma	6,000	3,000
Parco, Wyoming	8,000	3,000
Plants not in operation—		
Blackwell, Oklahoma	3,000	.....

Sinclair Refining Company has but recently completed a major improvement and modernization program involving construction of major proportions at practically all of its operating refineries. The total expenditure for this modernization work involving a large number of modern cracking units, gasoline recovery and stabilization systems, power house building and a complete revamping of its lubricating oil manufacturing facilities at Wellsville, New York, is reported to have totaled $18,000,000 and with the work requiring two years.

*This** SWAB

Ran 6,013 Miles without Replacing the Rubber

It was used 3 times an hour, 24 hours a day, for 98 days and traveled more than 6,000 miles inside the casing before the cup was worn beyond use. In addition, production was actually stepped up during this period.

COMPARE 98 days, more than three months, with 20 days, less than one month, which represents the best record for swab cup performance set by any of our competitors on this same well. The above record was made during January, February, March and April of last year and the same Kibele Swab has been working steadily ever since, pulling profits out of the hole with a minimum amount of expenditure for replacements.

** This record was made under actual field conditions on a production job for one of the major companies. Complete details will be supplied on request.*

No Overloads with a KIBELE

Two relief valves, set to unload at any given pressure, prevent overloading the Kibele Swab.

There is no such thing as "too big a bite" with a Kibele Swab.

The large fluid passage area of a Kibele Swab assures rapid progress downward through the fluid without slackening the line.

When coming out of the hole, fluid pressure expands the cup firmly against the casing, automatically compensating for any wear on the rubber and preventing bypassing.

Features of the KIBELE TUBING SWAB

QUALITY—The same high quality of rubber and construction is maintained in the Kibele Tubing Swab as in its big brother used in casing.

•

SPEED—The large fluid passage in the Kibele Tubing Swab makes for speed in operation.

•

SHORT—The Kibele Tubing Swab is short. It will easily pass around crooked joints of pipe.

•

LIGHT—The Kibele Tubing Swab is light. It is easily carried about from location to location.

•

STRONG—The Kibele Tubing Swab is strong. It is made from steel throughout.

•

SIMPLE—The Kibele Tubing Swab is simply constructed, easily taken apart and reassembled.

•

Wire or Write Today

Kibele Swabs invite comparison. We are willing to have them stand or fall on their merits in any competitive test. If you use swabs, or have any problem pertaining to them, wire or write us today for full information about the Kibele Swab and the service we are prepared to render.

For sale at all leading supply stores.

KIBELE TUBING SWAB

KIBELE B-TYPE CASING SWAB

KIBELE HEAVY DUTY CASING SWAB

KIBELE
MANUFACTURING COMPANY

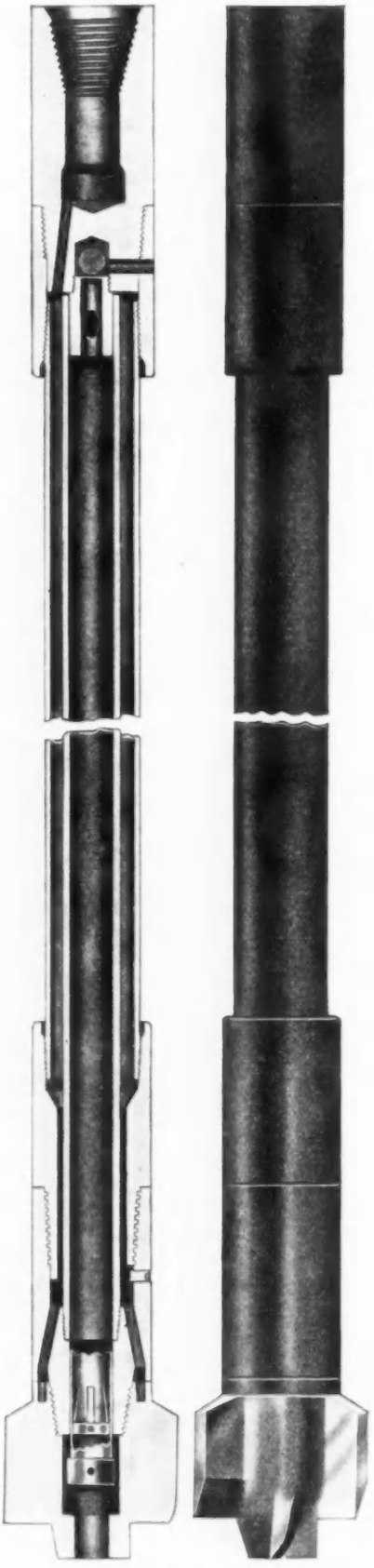
SLUSH PUMP PISTONS, OIL FIELD SPECIALTIES, WELL SWABS

A KIBELE DOESN'T COST.... IT EARNS

201 EAST CEVALLOS ST. SAN ANTONIO, TEXAS.

FEATURES

of the BREWSTER *Automatic* CORE BARREL



Automatic Core Barrel

THIS automatic feature consists of a means of washing the inner barrel clean. The water is allowed to pass through this barrel until all foreign substances are washed out; when the operation of coring begins the ports in the inner barrel are automatically closed, allowing the fluid to pass around the inner barrel to the bit.

Another feature is the position of the valve in the top of the barrel, which is arranged to prevent the pressure from holding the ball down, so that in soft sand coring there is no resistance on the inner barrel, thus allowing soft sand cores to enter the barrel. A vent is provided to allow fluid and air to pass out of the inner barrel.

These features are very desirable and fill a long felt want where soft sand and other coring is necessary.

In either soft or hard formation a full recovery is assured. Made in all sizes and any length.

This barrel is equipped with split liners the same as Type C and Type M barrels.

Type "M" Cutter Head

Barrel equipped with Roller Bit

The Brewster COMPANY-INC.
Shreveport Louisiana

BUY FROM YOUR SUPPLY HOUSE

Warehouses: The Iverson Specialty Co., Oklahoma City, Phone 2-2833; The Brewster Houston Store, 2000 Harrington St., Capitol 2031. ***Export Distributors:*** Acme Well Supply Co., Inc., 136 Liberty St., New York City.

[By use of the Type M Bit Body ROLLER CUTTER HEADS can be used with the Perfection Core Barrel.]

Markets • Production • Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

Continued Improvement East of California

United States production declined last week to the extent of 40,750 barrels a day, bringing the production curve down to 2,193,450 barrels daily. Practically all of this reduction in output was recorded by Oklahoma, where the necessity for a lower allowable resulted in a drop of 40,100 barrels daily. Oklahoma's production is now down to but 441,550 barrels a day, against an indicated market requirement of 435,000 barrels, excess of production over demand being only about 6500 barrels, indicating the extent to which Oklahoma has been putting its house in order.

It is apparent, from last week's American Petroleum Institute figures that considerable improvement has been shown in the supply situation east of California. Outside of California, current supply is in approximate balance with current demand, the excess of production over indicated nominations amounting to but 5000 barrels a day. If the figures of California are included, the excess daily production stands at approximately 50,000 barrels above current requirements. California has allowed production to continue at a rate of more than 500,000 barrels a day. Last week's production in California represented an excess over allowable of 53,000 barrels a day and an excess over actual market requirements of about 44,000 barrels a day.

Facts presented in this section show that practically all states outside of California have balanced production schedules with current market requirements. Kansas has cut production back to less than 100,000 barrels a day; Oklahoma to only slightly more than 440,000 barrels a day, and Texas production is now considerably under the 900,000-barrel limit previously fixed as normal by the Oil States Advisory Committee. In a number of instances, it is shown that production is actually below current market requirements. Total demand for curde oil, based upon normal runs of crude to refinery stills, has been reduced to but 2,144,000 barrels a day, with production running at a daily rate of 2,193,000 barrels.

California Curtailment Snags

Many California operators have continued to resist reducing output to rates indicated by market requirements, stating that there is little incentive to reduce output unless there is some assurance of obtaining higher market prices, overlooking the fact that as long as production continues to exceed market requirements there can be little hope for better prices. In fact, unless California operators endeavor to correct their present top-heavy situation, a downward price revision is indicated.

East Texas production increased slightly last week, but continued at a rate somewhat under 350,000 barrels daily. The gain amounted to 3600 barrels, which was the amount shown as the net increase for the entire state. Texas, outside of the Gulf Coast, recorded a net gain last week of 4900 barrels, which was offset by a decrease in the Texas Gulf Coast. California production increased 3400 barrels a day. In addition to the decline of 40,100 barrels reported by Oklahoma, there were declines in production of Kansas, North Louisiana, Eastern States and Rocky Mountain States. The declines, outside of Oklahoma, were practically offset by the gains reported elsewhere.

Refineries Gradually Reducing Runs

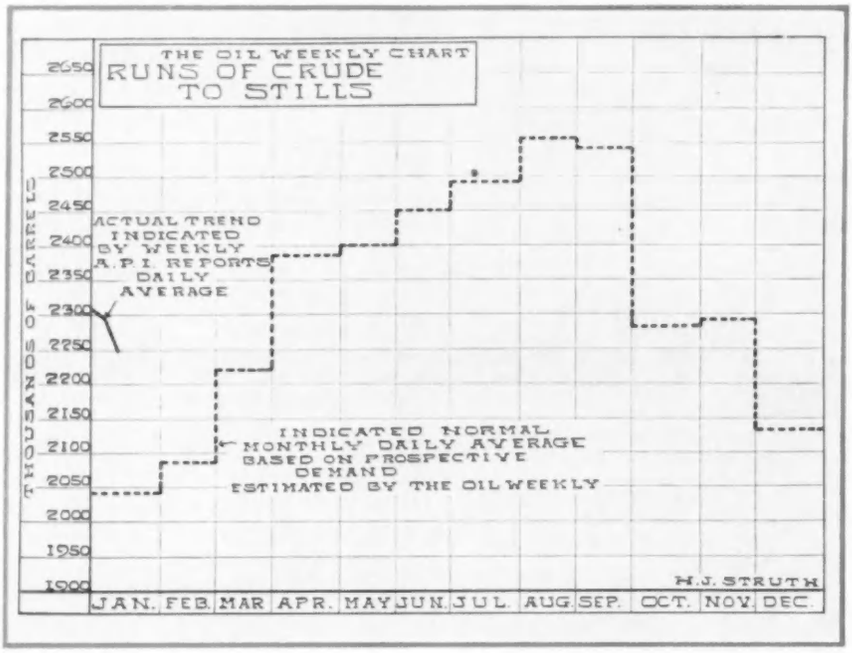
Refinery runs showed a further drop last week, when the daily average receded to a total for the United States of about 2,208,000 barrels, as compared with 2,249,000 barrels in the preceding week and 2,305,000 barrels at the close of last year. The reduction last week amounted to about 40,000 barrels, or at about the same rate of reduction reported in the preceding week.

The chart appearing in this section shows an estimated normal rate at which still runs should be conducted this year. It will be noted that the rate for January is calculated to not exceed 2,040,000 barrels, whereas the rate reported during the week ending January 9 was 2,249,000 barrels, or about 200,000 barrels above the indicated figure. The latest report, for last week, indicates that runs to stills are now about 160,000 barrels a day above normal.

The extent to which excessive running of crude through stills is affecting the gasoline stocks situation is shown by the report for last week, which states that refinery gasoline stocks amounted to 39,853,000 barrels, a gain over the preceding week of about 750,000 barrels. The figures also show that the gradual decline in still runs is having a beneficial effect upon the rate at which gasoline has been going into storage. In the preceding week, the increase in gasoline stocks amounted to approximately 1,200,000 barrels. The demand for gasoline is not expected to exceed a grand total for January of about 28,000,000 barrels, and after making provision for anticipated imports, natural gasoline and benzol and a prorata reduction necessitated by excessive production last year, the industry cannot afford to allow still runs to exceed a daily rate of 2,040,000 barrels. If conditions improve this summer, as is expected, the rate of throughput can normally be increased to more than 2,500,000 barrels a day, but existing conditions make it advisable to prevent further storage accumulations at this time.

Danger from Over-Production Is Not Past in California

Several forces are at work in California and it can not be said that danger from over-production is past. Operators in two or three fields are displeased with the new allowables, various agencies intimate that the price for further curtailment is higher crude prices, Kettleman Hills operators are denounced by some organizations for improper gas-oil ratios, and several operators insist that they will not continue to curtail production where offsetting wells are producing wide open. The various forces working for and



against curtailment form a complex problem and a new crisis is possible. Right at this time, some semblance of peace has been established, but there is a strong undertone of unrest in some quarters.

Production at Long Beach has increased to around 81,000 barrels, due to retaliatory measures on the part of large operators who have opened line wells to offset the effect of producers operated at their maximum yield. This may spread throughout the field, but these large operators intimate that they will reduce or shut in line wells to offset this increase. Long Beach has more than 200 operators and is far above its allowable.

The plea of the California Oil Producers Sales Agency for a "living price" for crude oil was taken to mean that higher prices might strengthen the curtailment structure. A few weeks ago this organization opposed the 456,700-barrel state allowable, but later decided that this lower total was a fair allotment and withdrew its objections to the new program. It represents a large number of independent producers and is a very influential organization.

A further reduction in refinery runs is being sought as a possible means of strengthening the gasoline market. Ability of the small refiner to obtain oil readily has led to the opening of two or three small refineries in the Los Angeles

Crude Runs to Stills, Gasoline Stocks and Gas and Fuel Oil Stocks

Report for Week Ending January 9, 1932

(Figures in Barrels of 42 gallons each)

District—	Potential Capacity (Daily) Total	Potential Capacity (Daily) Reporting	Per Cent	Crude Runs to Stills Total	Crude Runs to Stills Daily Average	Crude Runs to Stills Per c't Operated	Gasoline Stocks (see note below)	Gas & Fuel Oil Stocks
East Coast	633,700	633,700	100.0	3,102,000	443,100	69.9	4,861,000	7,978,000
Appalachian	149,600	137,400	91.8	567,000	81,000	59.0	1,331,000	1,495,000
Ind., Ill., Ky.	436,300	431,500	98.9	1,807,000	258,200	59.8	4,686,000	5,348,000
Okla., Kans., Mo.	485,700	435,200	89.6	1,627,000	232,400	53.4	3,262,000	4,108,000
Texas	838,200	765,400	91.3	3,540,000	505,700	66.1	8,193,000	11,233,000
Louisiana-Arkansas	233,100	230,500	98.9	1,146,000	163,700	71.0	1,428,000	4,315,000
Rocky Mountain	160,900	143,800	89.4	225,000	32,200	22.4	1,767,000	723,000
California	914,500	888,100	97.1	3,145,000	449,300	50.6	*13,578,000	96,379,000
Total January 9	3,852,000	3,665,600	95.2	15,159,000	2,165,600	59.1	39,106,000	131,579,000
Total January 2	3,852,000	3,665,600	95.2	15,454,000	2,207,700	60.2	37,989,000	132,477,000
Total January 10, 1931	3,730,100	3,571,200	95.7	15,017,000	2,145,300	60.1	†38,281,000	134,508,000
The Texas and Louisiana Gulf Coastal figures shown below are included above in the totals of their respective districts.								
Texas Gulf Coast	532,500	531,500	99.8	2,759,000	394,100	74.1	6,454,000	8,441,000
Louisiana Gulf Coast	147,500	147,500	100.0	738,000	105,400	71.5	1,304,000	3,470,000

Note: In all the refining districts indicated except California, figures in this column represent gasoline stocks at refineries. In *California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States—(stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

†Revised in Indiana-Illinois district, due to transfer to "Bulk Terminals" of stocks previously reported as "At Refineries."

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH ALLOWABLE QUOTAS AND CURRENT DEMAND

State—	Allowable or Economic Limit	Indicated Current Demand	Daily Average Last Week	Added to or Withdrawn from Storage (Estimated)	Daily Average Since Jan. 1	Indicated Excess or Shortage Since Jan. 1 (Cumulative)
Arkansas	38,000[1]	43,000	34,250	—8,750	34,181	—141,100
California	456,000[2]	465,000	509,000	+44,000	506,350	+661,600
Kansas	90,000[1]	92,000	99,200	+7,200	100,547	+136,750
Louisiana	54,000[1]	63,000	56,600	—6,400	56,275	—107,600
Oklahoma	435,000[3]	435,000	441,550	+6,550	465,562	+129,000
Texas	818,000[1]	840,000	848,450	+8,450	841,581	+25,300
Balance of U. S.	202,000[1]	206,000	204,400	—1,600	208,690	+103,050
Total	2,093,000	2,144,000	2,193,450	+49,450	2,213,186	+807,000

[1]Economic limit based upon data compiled by The Oil Weekly.
[2]Allowable set by California proration committee.
[3]Allowable set by Oklahoma Corporation Commission.

basin. This increased refining capacity has also been reflected back to the producer, who has enjoyed a slightly better demand for light oil. The gasoline market has suffered slight reactions from the increased supply.

Efforts are being made to force the proper gas-oil ratio at Kettleman Hills. The governor has been petitioned to stop the "excess" production of natural gas.

Oklahoma-Kansas Refiners Hold Runs to Current Needs

Crude oil movement in Oklahoma has settled down in a condition of supply for current needs. Refiners want only sufficient raw material for the amount of finished material that can be sold. This condition is responsible for the recent drop in demand at Oklahoma City as well as other pools.

It is further shown in the lack of interest displayed when

Cracked Gasoline Production

Week Ending January 9, 1932

(Barrels of 42 gallons)

	Potential Charging Capacity Daily Reporting			Production Daily	
	Total		%	Total	Average
East Coast	261,300	236,300	94.0	623,000	89,000
Appalachian	56,300	54,100	96.1	175,000	25,000
Ind., Ill., Ky.	330,400	315,400	95.5	562,000	80,300
Okla., Kans., Mo.	237,800	219,500	92.3	327,000	46,700
Texas	450,800	436,200	96.8	759,000	108,400
Louisiana-Arkansas	112,400	112,400	100.0	238,000	34,000
Rocky Mountain	99,900	98,400	98.5	75,000	10,700
California	190,800	190,800	100.0	339,000	48,500
Total Jan. 9	1,739,700	1,663,100	95.6	3,098,000	442,600
Total Jan. 2	1,739,700	1,663,100	95.6	3,214,000	459,100
Total Jan. 10, 1931	1,589,600	1,367,900	86.1	2,462,000	351,700
The Texas and Louisiana Gulf Coast figures shown below are included above in the totals of their respective districts.					
Texas Gulf Coast	352,400	347,400	98.6	613,000	87,600
La. Gulf Coast	77,000	77,000	100.0	182,000	26,000

Imports of Petroleum

(Barrels of 42 gallons)

	Week Ended Jan. 9	Week Ended Jan. 2
AT ATLANTIC COAST PORTS—		
Baltimore	216,000	111,000
Boston	.....	130,000
New York	622,000	[1]935,000
Philadelphia	70,000	206,000
Others	181,000	[1]230,000
Total	1,089,000	1,612,000
Daily Average	155,571	230,286
AT GULF COAST PORTS—		
Galveston District	65,000	.....
New Orleans and Baton Rouge	115,000	131,000
Port Arthur and Sabine District	.....	.....
Tampa	.....	.....
Total	180,000	131,000
Daily Average	25,715	18,714
AT ALL UNITED STATES PORTS—		
Total	1,269,000	1,743,000
Daily Average	181,286	249,000
Daily Average Four Weeks Ended	208,000	224,714
Distribution of Total Imports is as follows:		
Crude	527,000	[1]973,000
Gasoline	435,000	[1]104,000
Gas Oil	.....	[1]105,000
Fuel Oil	307,000	561,000
Total	1,269,000	1,743,000

[1] Revised.

California Oil Receipts

(Barrels of 42 gallons)

	Week Ended Jan. 9	Week Ended Jan. 2
AT ATLANTIC COAST PORTS—		
Baltimore	25,000	.....
Boston	.....	.....
New York	80,000	262,000
Philadelphia	117,000	219,000
Others	.....	.....
Total	222,000	481,000
Daily Average	31,714	68,714
AT GULF COAST PORTS—		
Total	.....	80,000
Daily Average	.....	11,429
AT ATLANTIC AND GULF COAST PORTS—		
Total	222,000	561,000
Daily Average	31,714	80,143
Daily Average Four Weeks Ended	44,500	47,393
Distribution of Total California Oil Receipts is as follows:		
AT ATLANTIC COAST PORTS—		
Gasoline	222,000	481,000
Total	222,000	481,000
AT GULF COAST PORTS—		
Gasoline	.....	80,000
Total	.....	80,000

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,128,600	59,600,450
March	531,900	110,550	585,000	177,950	40,250	47,550	108,800	95,400	528,100	2,225,500	68,990,850
April	543,650	109,250	723,050	185,850	39,050	47,000	111,500	95,500	527,350	3,382,200	71,465,750
May	561,950	107,400	767,200	185,950	39,200	46,650	111,250	97,500	534,150	2,451,250	75,975,950
June	556,850	103,150	828,250	170,100	36,500	44,900	108,950	97,950	520,300	2,466,950	74,009,750
July	527,950	100,000	912,250	157,850	33,650	41,400	107,600	94,400	517,900	2,493,000	77,282,700
August	306,150	101,900	976,800	153,550	30,400	37,650	109,600	92,900	510,900	2,319,050	71,890,200
September	261,050	104,600	752,250	149,950	29,600	38,000	117,400	92,250	505,550	2,050,650	61,518,950
October	423,600	103,950	865,800	153,500	29,200	37,750	121,600	93,950	503,800	2,333,150	72,327,750
November	541,250	104,750	855,550	158,850	29,300	37,650	124,300	93,950	503,050	2,448,650	73,460,150
December	534,650	105,500	795,500	153,550	27,850	35,100	124,500	92,150	503,000	2,371,800	72,525,700
January 2	493,300	103,150	690,900	144,550	27,800	33,700	125,050	90,950	499,700	2,209,100	15,463,700
January 9	481,650	101,150	732,200	139,000	29,200	34,250	126,700	84,450	505,600	2,234,200	15,639,400
January 16	441,550	99,200	737,100	139,250	28,700	34,250	122,100	82,300	509,000	2,193,450	15,354,150
Increase	.....	.....	4,900	250	.....	.....	.....	.....	3,400	.....	.....
Decrease	40,100	1,950	.....	.....	500	.....	4,600	2,150	.....	40,750	285,250

Last Week's Daily Average Production by Districts

TEXAS	Jan. 16	Jan. 9
Panhandle	49,200	52,450
North Texas	49,450	49,750
West Central Texas	25,600	24,250
West Texas	175,250	172,850
East Central Texas	51,150	51,600
East Texas	333,100	329,500
Southwest Texas	53,350	51,800
Texas Gulf Coast	111,350	112,650
TOTAL TEXAS	848,450	844,850
Oklahoma	441,550	481,650
California	509,000	505,600
Kansas	99,200	101,150

LOUISIANA	Jan. 16	Jan. 9
North Louisiana	28,700	29,200
Louisiana Gulf Coast	27,900	26,350
TOTAL LOUISIANA	56,600	55,550
ARKANSAS	34,250	34,250
MOUNTAIN STATES		
Wyoming	34,550	38,450
Montana	5,700	6,100
Colorado	3,550	3,600
New Mexico	38,500	36,300
TOTAL MOUNTAIN STATES	82,300	84,450
EASTERN STATES	122,100	126,700
TOTAL UNITED STATES	2,193,450	2,234,200

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	0	1	0	0	0	0	0	1	0	0
California	3	4	2	4	0	0	1	0	410	2,400
Illinois	1	0	0	0	0	0	1	0	0	0
Indiana	1	4	0	2	0	1	1	1	0	170
Kansas	12	8	6	4	2	2	4	2	4,285	2,930
Kentucky	2	6	1	2	0	2	1	2	5	105
Louisiana	15	3	6	1	1	2	8	0	2,880	2,000
Michigan	1	6	0	3	1	1	0	2	0	850
Mississippi	3	2	0	0	1	2	2	0	0	0
New Mexico	0	1	0	1	0	0	0	0	0	5,800
New York	11	0	11	0	0	0	0	0	72	0
Ohio	9	21	2	5	7	10	0	6	22	132
Oklahoma	14	6	7	2	2	3	5	1	33,480	90
Pennsylvania	32	10	22	4	4	4	6	2	108	49
East Texas	116	137	106	109	0	6	10	22	741,313	716,874
West Virginia	11	0	3	0	8	0	0	0	17	0
Total	231	209	166	137	26	33	39	39	782,582	731,400
Increase	22		29		..		..		51,182	
Decrease	..		..		7		..		.....	

Comparison of Permits Granted for New Wells

	For Week Ending Jan 16	Previous Week	This Week 1931	Total This Month	This Month 1931	Total This Year	Total This Date Last Year	1931 Year Total
Arkansas	0	1	3	1	4	1	4	34
California	3	3	11	8	26	8	19	342
Louisiana	11	9	9	28	42	28	27	309
Kansas	8	15	12	35	54	35	23	475
Oklahoma	12	6	33	29	119	29	72	842
Texas	101	76	90	225	381	225	234	6,961
Total	135	110	158	326	626	326	379	8,963

substantial amounts of crude oil are offered. Special inducements have failed to bring deals of this nature. Recently one lot of 117,000 barrels of crude oil was offered at the price of 100,000 barrels but it found no buyers. At least no deal has been made yet. The saving in money was not sufficient to overcome the desire to buy only for current requirements.

In Kansas, Derby Oil Company announced this week that it would reduce purchases of crude oil by 66 per cent. The concern has refinining plant at Wichita and distribution in the state. E. C. Moriarty, vice president, gave notice in a communication to the Kansas Public Service Commission. Purchases will be reduced to 2500 barrels daily. The concern has been taking 7000 barrels daily. Market conditions and storage conditions were the reasons given for the change. This restriction in purchases will continue for 30 days from January 15.

Field output for both Oklahoma and Kansas has gone down in keeping with the disposition of purchasers to supply only current needs. Only 4400 barrels net daily went into storage for the week ending January 16. In December additions to storage ran close to 50,000 barrels daily.

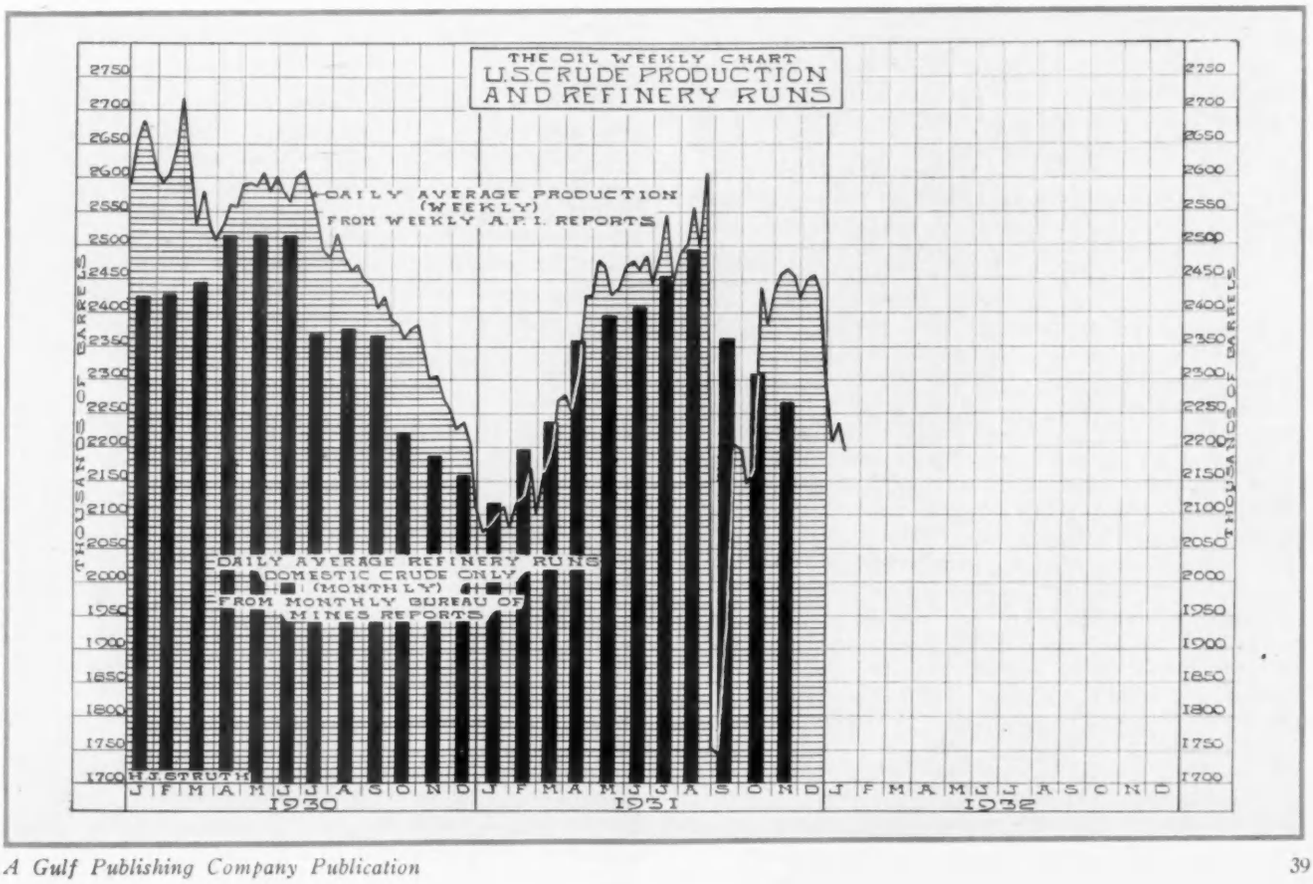
The Oklahoma City pool and all fields in Kansas have contributed the most to this reduction. Oklahoma City pool production for the week ending January 16 was only 103,365 barrels daily, while Kansas production dropped to 98,890 barrels daily for the week. The emergency order by which Oklahoma City's allowable was reduced gave this pool 120,000 barrels daily, a reduction of 45,000 from the figure set for the first quarter of this year. Sudden change of heart in regard to this pool caused the change in the order. Then last week actual production ran 17,000 barrels daily lower than the amount specified in the emergency order. Kansas is allowed 100,000 barrels daily under the regulations of the Public Service Commission.

The relation of the Oklahoma City pool to other pools of Oklahoma will come up for public hearing January 26, when the Corporation Commission will hear the protest of B. G. Patton, president of the Plains Petroleum Company. His protest is against the emergency order and he has indicated that he will make a plea in behalf of Oklahoma City as it is related to the Greater Seminole area. Seminole pools last week contributed 148,000 barrels daily, some 45,000 barrels per day more than the Oklahoma City pool.

The disposition of refiners to keep refinery runs down and crude purchases down to run requirements is given credit for the better tone in the gasoline market in Group 3. Monday of this week the quotation on U. S. motor gasoline stood at three cents a gallon. While this price is far below that considered profitable, it does represent an advance of three-quarters of a cent above the level reached late in December.

Refining plants that are a part of integrated oil concerns continue to withhold gasoline from the spot market. These plants are being used to supply company owned stations and to supply merchandise for customers on contract. The amount of gasoline moving on spot quotations is perhaps the lowest in the history of oil in the Mid-Continent area.

Shreveport.—A check made Saturday, January 16, showed that at least 39 producing oil wells in Caddo Parish in the Dixie and Pine Island fields had been forced to shut down because of high water.


THE OIL WEEKLY CHART
U.S. CRUDE PRODUCTION AND REFINERY RUNS
DAILY AVERAGE PRODUCTION (WEEKLY) FROM WEEKLY A.P.I. REPORTS
DAILY AVERAGE REFINERY RUNS DOMESTIC CRUDE ONLY (MONTHLY) FROM MONTHLY BUREAU OF MINES REPORTS
THOUSANDS OF BARRELS
H.J. STRUTH
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1930
1931
1932

East Texas Crude Market Shows Signs of Weakening

Kilgore, Texas.—Total lack of interest on the part of the crude purchasers in East Texas that pay the posted price of 83 cents per barrel to absorb new well connections is having a depressing influence on the crude market situation in this prolific area.

Notice was given by Brigadier General Jacob F. Wolters, commander of troops enforcing proration, at the conclusion of a meeting of the field's well connection committee, composed of representatives of purchasers and pipe line companies, held here January 19, that operators must shuffle for themselves in lining up market outlets for completions made after this date. The committee had failed to function properly since it was created late in December to provide connections for well owners, and it was ordered disbanded by the military leader.

These new developments are destined to have some bearing on the drilling activity and also the crude price situation in the field.

All major companies have a closed door policy on new connections that involve the purchase of outside crude except when pressure is brought to bear by the military or by operators enjoying a friendly relationship.

Local refiners and small crude buyers that are not opposed to the acceptance of crude at less than posted price have not deserted the market, and they are anticipating the return of bargain priced oil. Heretofore below posted crude has been restricted to runs made from leases that have defective titles.

Sunday production banned by the larger companies and alleged "twilight crude," crude produced in violation oil coming under the latter classification, have been rather limited because of constant watch kept by military forces for those evading the 100-barrel daily quota per well.

Exclusive of the unconnected wells owned by independents having local tank farms, tank car loading racks and refineries, it was reported at the Kilgore meeting that there are now 28 completed wells awaiting pipe line relief. General Wolters announced that he will make an effort to obtain immediate relief for such wells by making allocations among the various purchasers, but that in the future owners of new completions must negotiate their own market outlets. Cranfill-Reynolds Company, Houston Oil Company, East Texas Refining Company, Yount-Lee Oil Company and Danciger Oil & Refining Company are included in the group of larger independents having some sort of transportation facilities within the field, but they have asked for outside relief recently. The former concern was served by the Sinclair-Texas Pipe Line Company until January 13.

Danciger Oil & Refining Company has eight wells that have been idle for some weeks, and has received no encouragement of being given pipe line relief. The latter has a 10,000-barrel refinery in the field that has never been operated beyond a brief test run.

Independent operators that divert their Sunday production to lease storage because of pipe lines having banned same have had five full days of oil accumulation since the Sabbath holiday went into effect. They are beginning to look around for storage relief. Four local refineries are reported to be paying an average of 35 cents per barrel for this crude with deliveries to plants being made mostly in truck tanks.

Uncertainty of the crude price structure and throttling of crude charges to stills at big refineries are believed to be the two principal factors behind the bearish attitude being taken by the major companies lately, with the East Texas fields bearing the brunt of the retrenchment policy.

Washington, D. C.—Hearing on proposals for a tariff of $1.00 per barrel on crude petroleum and 50 per cent advalorem on refined products are expected to be held by the House Ways and Means Committee during the first week in February, it was learned today.

Information that the committee was planning to give consideration to the oil states demand for protection came coincidentally with the introduction in the house of another tariff measure on oil by Congressman Sanders of Texas, calling for the above rates, based on the recent findings of the United States Tariff Commission in its investigation on the cost of laying down Mid-Continent and foreign oil at Atlantic seaboard points.

Ever since the beginning of the session there has been a continuous demand for action on the oil tariff problem which now has assumed such proportions that it is believed the committee will investigate the subject, although the holdings of hearings, of course, is not necessarily an indication that any tariff action will be recommended.

Austin, Texas.—Suit of the State of Texas against R. B. Whiteside and 145 other defendants, involving about 3000 acres of land in the Yates field, was called for trial Monday by Judge C. A. Wheeler in district court and continued on motion of defendants. Trial probably will begin Thursday or Friday of this week. The suit involves validity of surveys, and should the state prove its contention that the land involved has not properly passed from state title, claims more that $1,000,000 in royalties for the school fund.

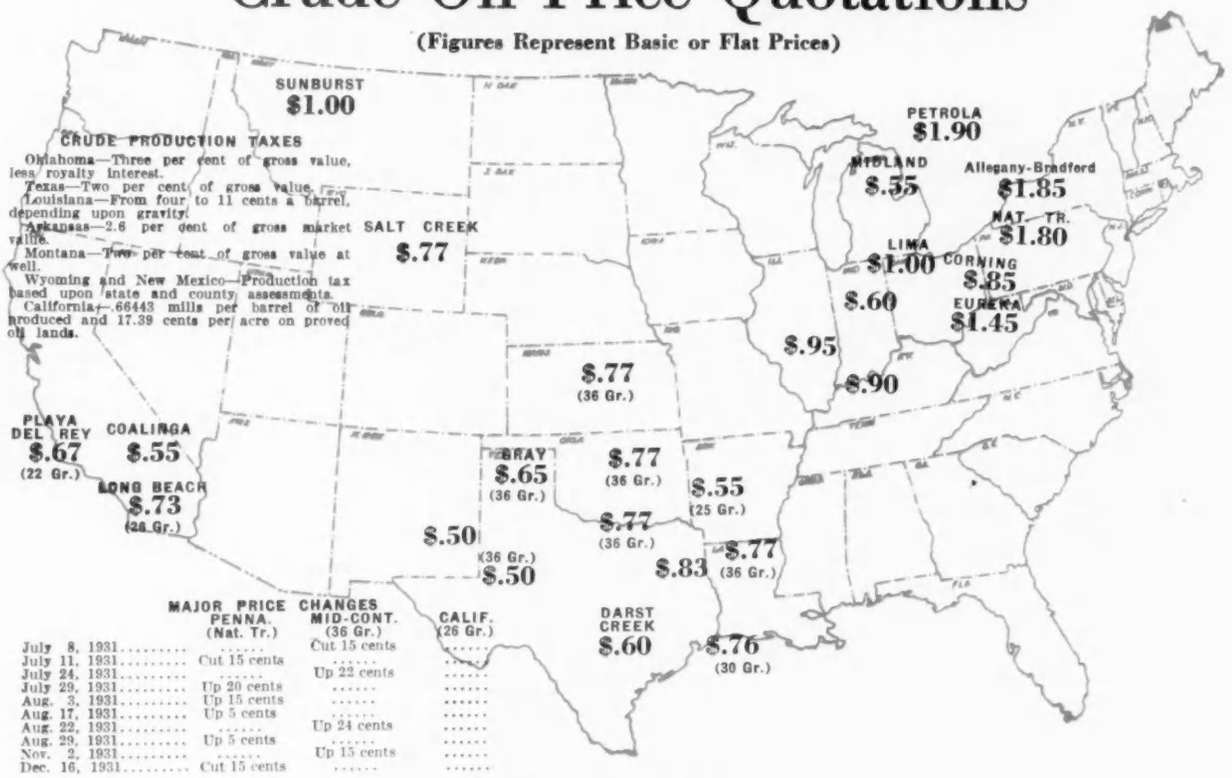
Fort Worth, Texas.—Two small crude refineries in Coleman County section, Central West Texas, are reported to have been closed as a result of action taken by the State Comptroller's office because of having failed to fully comply with the state law governing the four-cent sales tax on gasoline. O'Bar Refining Company, which has a 500-barrel capacity plant at Coleman, and Echotex Refining Company, owner of a 300-barrel daily capacity skimming unit at Echo, are credited with having shut down following the action brought by the state. Both plants were erected last year to operate on local crude that was turned back to the open market by major companies.

General Petroleum Withdraws Official Price at Kettleman

General Petroleum Corporation has withdrawn its official price for Kettleman Hills crude, but has established an unofficial price for the field. Contracts have been made in some cases on the basis of the unofficial quotations. The company has announced to some producers that it will pay from 66 cents to 78 cents per barrel for Kettleman Hills crude, ranging from 33 gravity to 39.9 gravity, the 33 gravity oil to be purchased at 66 cents, with two cents added for each degree up to 39-39.9. No quotation has been posted for oil above 40 gravity. The former posted price was 66 cents per barrel for all grades of oil.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
July 8, 1931	.....	Cut 15 cents	.....
July 11, 1931	Cut 15 cents	.....	.....
July 24, 1931	.....	Up 22 cents	.....
July 29, 1931	Up 20 cents	.....	.....
Aug. 3, 1931	Up 15 cents	.....	.....
Aug. 17, 1931	Up 5 cents	.....	.....
Aug. 22, 1931	.....	Up 24 cents	.....
Aug. 29, 1931	Up 5 cents	.....	.....
Nov. 2, 1931	.....	Up 15 cents	.....
Dec. 16, 1931	Cut 15 cents	.....	.....

Official Postings and Differentials

(Revised to January 19, 1932)

California: (Effective June 19, 1931.)

Signal Hill, Seal Beach and Alamitos Heights: 14 to 22.9 gravity 65 cents; 23 gravity 67 cents with differential to two cents for each degree upward. Top price for Signal Hill, 30 gravity, 81 cents; top price Seal Beach and Alamitos Heights, 27 gravity, 75 cents.

Huntington Beach: 14 to 21 gravity, 65 cents; 22 gravity, 66 cents with differential of two cents for each degree upward. Top price, 27 gravity, 76 cents.

Inglewood: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity 76 cents.

Playa Del Rey: 19 to 20.9 gravity 65 cents with differential of one cent for each degree upward. Top price, 25 gravity, 70 cents.

Olinda and Brea Canyon: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents; 22 gravity 68 cents with differential of two cents for each degree upward. Top price, 28 gravity, 80 cents.

Coyote Hills: 14 to 22.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents with differential of two cents for each degree upward. Top price, 28 gravity, 79 cents.

Santa Fe Springs: 24 to 26.9 gravity 65 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 73 cents; 30 gravity 75 cents; 31 gravity 78 cents; 32 gravity 80 cents; 33 gravity 83 cents; 34 gravity 85 cents; 35 gravity and above 87 cents.

Whittier, La Habra and Montebello: 65 cents a barrel.

Torrance: 14 to 21.9 gravity 65 cents with differential of one cent for each degree to 25 gravity and two-cent differential for 25 gravity. Top price, 25 gravity, 70 cents.

Richfield: 14 to 20.9 gravity 65 cents; 21 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity, 74 cents.

Elwood: 33 gravity 79 cents; 34 gravity 81 cents with differential of three cents for each degree upward. Top price, 36 gravity, 87 cents.

Newhall, McKittrick and Kern River: 55 cents a barrel.

Midway-Sunset, Elk Hills and Buena Vista Hills: 14 to 21.9 gravity 55 cents; 22 gravity 56 cents; 23 gravity 58 cents; 24 gravity 61 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 74 cents; 30 gravity 76 cents.

Lost Hills: 14 to 20.9 gravity 55 cents; 21 gravity 57 cents; 22 gravity 59 cents; 23 gravity 60 cents; 24 gravity 62 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 67 cents; 28 gravity 69 cents; 29 gravity 71 cents; 30 gravity 72 cents.

Coalinga: 14 to 24.9 gravity 55 cents; 25 gravity 57 cents.

Wheeler Ridge: 55 cents a barrel.

Athens, Dominguez and Rosecrans: 24 to 24.9 gravity 69 cents with differential of two cents for each degree upward. Top price, 34 gravity, 89 cents a barrel.

Oklahoma, Kansas, North Texas (Effective January 8, 1932).

Below 29 gravity; 61 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at 85 cents.

Texas Panhandle: (Effective November 2, 1931)

Gray County: Below 35 gravity: 61 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at 73 cents.

Carson and Hutchinson Counties: Below 35 gravity; 56 cents with differential of 2 cents for each degree to 40 gravity and above which is posted at 68 cents.

West Texas: (Effective November 2, 1931).

Crane-Upton, Crockett, Ector, Howard-Glasscock, Pecos and Winkler Counties, Texas and Lea County, New Mexico: 50 cents a barrel.

Southwest Texas: (Effective November 2, 1931)

Refugio: Heavy: 75 cents.

Refugio: Light: (Same as Gulf Coast—see below).

Gulf Coast: (Effective November 2, 1931)

Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble and Refugio Light: Below 25 gravity: 70 cents, with differential of 1 cent for each degree to 40 and above which is posted at 86 cents.

Mirando: 75 cents; **Salt Flat:** 60 cents; **Darst Creek:** 60 cents; **Pettus:** 85 cents; **Markham:** 67 cents.

East Texas (Effective November 2, 1931)

Flat Price 83 cents.

North Louisiana and Arkansas: (Effective Nov. 4, 1931)

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Cricton, De-Soto, El Dorado, Cotton Valley, Sarepta, Cartersville: Below 25 gravity 53 cents with differential of 2 cents for each degree beginning with 25 gravity and ending with 40 and above. Top price 85 cents a barrel.

Smackover: 55 cents.

Rocky Mountain States: (Effective Nov. 3, 1931)

Salt Creek: Below 29 gravity 61 cents; 29-29.9 gravity 63 cents, with differential of 2 cents each degree to 40 and above. Top price 85 cents.

Elk Basin and Grass Creek: $1.05; **Big Muddy:** 83 cents; **Lance Lance Creek** $1.05; **Rock Creek:** 85 cents; **Sunburst:** $1.00; **Osage:** 98 cents; **Cat Creek:** $1.05 cents; **Pondera:** 90 cents; **Hogback, New Mexico:** 80 cents.

Eastern States: (Effective November 3, 1931)

Lima: $1.00; **Indiana:** 60 cents; **Illinois:** 95 cents; **Princeton** 95 cents; **Wooster:** $1.15; **Western Kentucky:** 90 cents.

Pennsylvania: (Effective December 16, 1931)

Bradford District: $1.85; **National Transit Oil:** $1.80; **Southwest Pennsylvania Pipe Line Oil:** $1.55; **Eureka Pipe Line Oil:** $1.45; **Buckeye Pipe Line Oil:** $1.25; **Corning Crude:** 80 cents.

Michigan: (Effective Oct. 9, 1931). **Midland:** 55 cents a barrel. **Muskegon:** Same posting as Mid-Continent; 61 cents to 85 cents a barrel.

Canada: (Effective Nov. 3, 1931).

Petrolia: $1.90; Oil Springs: $1.97.

Five Papers Provide Interesting Day For Production Engineers at Tulsa

By FLOYD SWINDELL
Staff Representative

TULSA.—The Production Division of the American Society of Mechanical Engineers opened its 1932 activities with an all-day meeting here Friday, January 15. The program consisted of five papers, three of which were reviews or abstracts of subjects which will be fully covered in special publications or in the transactions of the society. With approximately 60 engineers and executives in attendance, the meeting developed into one of the most lively discussions that has been held in Tulsa. John T. Hayward, chief engineer, Barnsdall Oil Corporation, opened the meeting with a review of, "Tests of Steam Rotary Drilling Equipment."

Mechanical engineers employed both by designers and operators have been handicapped by an almost complete absence of reliable data on drilling equipment under field use. In order that this might be improved a cooperative research committee was organized from among Mid-Continent engineers, who conducted exhaustive tests on wells in the Oklahoma City and Perry districts. The report, which consists of about 50 pages, will be issued within the next two weeks. It is the first attempt to present reliable data on this type of equipment and it should serve as a handbook for manufacturers and operators. Professor William H. Carson, director of the School of Mechanical Engineering at the University of Oklahoma, directed the work and was assisted by the research committee, by engineers of various manufacturing and operating companies, and by students.

According to Mr. Hayward the following important conclusions may be drawn from the investigation: First, that thermodynamically, the regular steam rotary rig is very inefficient; second, that nothing may be gained at present by going to boiler pressures higher than 250 pounds; and third, that "by using steam expansively at the engine and pumps, and paying proper attention to the general details of hookup, the rotary rig under Mid-Continent conditions, should easily be run from two superheated, insulated, boilers of 100 horsepower each." Present practice in the deeper fields is the use of four 125 horsepower boilers. The complete report may be secured from either the Tulsa or New York offices of the society at a cost of seventy-five cents per single copy.

"Design of Diesel Engines," by Hollis P. Porter, induced a lively discussion which persisted throughout the remainder of the meeting. Mr. Porter outlined the fundamentals of design and made suggestions regarding adaptation to oil field use. According to statements of several engineers, it has been found impractical to operate the Diesel engine on any fuel other than fuel oil because of residue. It seemed to be the general concensus of opinion that Diesel engines will not be generally used in the oil industry until it is possible to satisfactorily use average crude for fuel.

The third paper was an abstract of the, "Report on Rotary Drilling With Electric Motors," by Harold W. Manley, Barnsdall Oil Corporation and a member of the research committee. The electrical sub-committee which carried on the investigation, adopted a time study procedure which briefly was as follows:

1. Hoisting Operations.
    a. Hoisting pipe.
    b. Setting slips and breaking out.
    c. Picking up and racking.
    d. Lowering elevators.
2. Lowering Operations.
    a. Picking up and making up drill pipe.
    b. Lowering pipe and unlatching elevators.
    c. Hoisting elevators.

The time required for each operation was taken with a stop watch. In addition to this study, fast intergrating recording wattmeters were used in determining the horsepower and K.W.H. requirements per stand of drill pipe during hoisting operations. Discussion of this report developed that two lines of thought now exist among engineers in the industry. One group advocates that the present heavy rotary equipment has been built with power in excess of that actually needed under efficient usage, while the other believes that an excess of power is necessary to adequately provide for the unusual problems which arise. Through the study it was found that 15 wells drilled to an average depth of 3403 feet in the Seminole district, showed an average power cost of .393 cents per foot and the average power costs on 14 wells drilled to an average depth of 6505 feet at Oklahoma City, was .768 cents per foot.

Following the luncheon, William G. Heltzel, chief engineer for the Stanolind companies and chairman of the Production Division of the American Society of Mechanical Engineers, gave an address of welcome and outlined general activities of the division. One of the most interesting papers on the program was that of H. H. Wright, Gypsy Oil Company, who presented, "Belting Practice in the Oil Industry." Mr. Wright, through the use of definite examples, showed how belts may be selected for use under any given set of conditions. During the discussion, it was indicated that the average oil company engineer designs his layout and then refers to manufacturers' tables in selecting the proper belt. This is the first attempt at advancing a technical method of selecting belts.

Chairmanship of the meeting was turned over to H. F. Brindel, mechanical engineer for the Gypsy Oil Company and chairman of the sub-committee on unfired pressure vessels. Mr. Brindel reviewed the 1931 A. S. M. E. code on unfired pressure vessels and pointed out the advances that have been made in securing a more generous code since members of the Production Division have taken an active part in formulating principles which would be adaptable to the needs of the oil industry. The chairman introduced G. Raymond, general manager of Black, Sivalls, and Bryson, who spoke on the, "Progress in Construction of Unfired Pressure Vessels." Dealing with the question of welded vessels versus riveted vessels, Mr. Raymond stated that in recent months his company had received only two requests for specifications on the latter type and concluded that the welded vessel is universally accepted, except perhaps in a few countries where modern welded vessels are not known.

The final paper of the program was an abstract on "Stresses In Sucker Rod Joints," by Emory Kemler of the Gulf Research Laboratories and the Mechanical Engineering School, University of Pittsburg. The paper was read by D. L. Trax, engineer for the Gypsy Oil Company and secretary of the Production Division. Through experimental work Mr. Kemler has shown that a large percentage of the load imposed upon sucker rods is concentrated on the first thread. The theme of the paper is better distribution of load through change of design of pins and boxes.

Colombian Barco Controversy Now Being Aired in U. S. Congress

WASHINGTON, D. C.—After a quarter century of debate in the Colombian Congress, the Barco controversy is now transferred to the Congress of the United States.

The Barco Concession is a weapon of politics just as surely as a French 75 millimeter gun is a weapon of war.

Conceived early in the century in payment of a political debt, this famous grant has been in politics ever since. Colombian politicos too numerous to mention have risen and fallen, one after another, on the fulcrum of the Barco.

It is to be regretted that the exigencies of the presidential campaign seem to demand that this old herring shall be dragged across the American scene, particularly so in that such criticism may serve further to intimidate our too-timid State Department, traditionally weak in upholding and advancing American interests abroad.

Persons well informed are aware that a technical defense can be offered on behalf of the state department, but the average citizen has never yet received a satisfactory answer to his question:

"Why is it that the Royal Dutch-Shell, whose name is partly Dutch but whose backing is predominantly British, is allowed to operate in the United States while American citizens are not allowed to produce oil from British soil?"

The average citizen above referred to would not expel Shell from the United States, but he will not listen to charges of undue zeal on the part of the state department on behalf of American oil interests until this situation is redressed.

He will not bestir himself in defense of Andrew Mellon, but, one of these days, he may rise up and ask:

"If not, why not?"

If the state department did not do everything in its power to defend American rights abroad, in Colombia, and in the Barco Concession, then why was it derelict in its duty?

If this average citizen is of the Democratic persuasion, he may hope and perhaps does believe that the downfall of the Hoover-Mellon regime is imminent; but he will not approve of the awkward use of such a weapon in order to hasten that end.

It is alleged that the restoration of the Barco Concession was made a condition of the payment by the National City Company of a final installment of a $20,000,000 credit granted to the Republic of Colombia.

No one seems to have perceived that the shoe may have been on the other foot; that the decree of cancellation may have been intended by Olaya's predecessors only as an initial maneuver in an adriot campaign to force the granting of such a loan by American financial interests—to force American claimants to pay twice for the same property.

At this writing, Colombia has the money and American interests hold the sack.

Secretary Stimson, Secretary Mellon, and President Olaya Herrera of Colombia have come very near to conflict in their testimony regarding the alleged connection between the loan and the concession.

Francis White, assistant secretary of state, testified before the house judiciary committee hearing charges of impeachment against Secretary Mellon that the department of state "did not come into the oil matter," except to transmit representations between oil interests and the Government of Colombia.

President Olaya Herrera is quoted in an interveiw published in The New York Times of August 8, 1931, as having recalled Secretary of the Treasury Mellon's advice to him to settle the petroleum problem to hasten Colombia's recovery. He is likewise quoted in El Tiempo of Bogota, as having recounted a conversation with Secretary Mellon at a dinner given by Secretary Stimson in his honor. "We conversed extensively concerning the problems of Colombia," he said. "I told him we were facing a crisis."

Secretary Mellon's reply is quoted at second hand as follows:

"Settle your pending questions on petroleum. Decide fairly and justly the difficulties in this respect and, once you have settled these, there will be open for Colombia, no doubt, avenues for economic progress and restoration."

Alexander W. Gregg, counsel for Mr. Mellon, read before the house committee a statement dictated by the secretary, who said:

"Mr. Mellon says that he met President Olaya at one of the usual social functions, and, of course, conversed with him, but such conversation was general and respecting financial and other conditions in Colombia.

"Mr. Mellon had no conversations with President Olaya that had to do with the so-called Barco concession nor Gulf Oil Corporation nor with any suggestion whatever, alleged or implied, as to any support or assistance on the part of the government with respect to Colombia obtaining credit.

"Mr. Mellon has never had any conversations with officials of our state department concerning the Colombian loan, nor has he had any conversations with bankers with respect to this loan."

The Barco controversy, as a matter of fact, is not yet definitely settled. There is a dispute between royalty owners under the original concession and grantees under the ratification of 1931 regarding the adjustment of royalty rates consequent upon the increase of the percentage payable to the government—five per cent under the original grant, which was raised to 10 per cent under the ratification. The Compania Colombiana de Petroleos, Gulf subsidiary, seeks a downward revision of over-riding royalties payable to the heirs and assigns of General Barco, who include the Catholic Church and certain American investors. The consent of these various participants, so far, has been withheld; but it is reported that negotiations are approaching a compromise conclusion.

Houston.—A recent addition to Harris County wildcats, Hewitt and Shibe's Dan Wise 1, situated about three miles southwest of Fairbanks, or 100 feet each way out of the southeast corner of the Dan Wise 149.3-acre tract in the Washington County Railroad Survey, Section 11, has rigged up, spudded, and attained a depth of 1708 feet since December 28. The test is four miles northeast of Givens et al's Lobit 1, another wildcat which has been drilling since midsummer, 1931, and which is repairing the derrick at present before proceeding below 2739 feet.

Hobbs Operators Renew Effort To Introduce Unitization Plan

Hobbs, New Mexico.—Effort is being renewed by operators in the Hobbs field to introduce a unit plan of operation that will be satisfactory to all parties. Sufficient lease owners have pledged support to the pooling of all properties as a means of conserving gas pressure and combatting water encroachment upon the west flank of the field through pressure maintenance to indicate that the prospects are favorable for such a plan being adopted.

Signing of an agreement on unitization was to have been included in the proration extension pledge made by all operators at a meeting held with New Mexico officials in Santa Fe, January 8. Opposition was voiced by some operators against mixing the two propositions into one agreement. E. G. Allen, division superintendent for Shell Petroleum Corporation, and chairman of the Hobbs field proration advisory committee, appointed the following committee to work on a plan, or form of contract with a view of unitizing the entire producing area: H. C. Bretschneider, Midwest Refining Company; L. E. Barrows, The Texas Company; R. H. Morrison, The California Company; E. J. Nicklos, Continental Oil Company, and K. Winship, Gypsy Oil Company.

Preliminary work on a unit plan has been carried out by a committee headed by Harvey Hardison, petroleum engineer for The California Company, and they will continue work on the technical features involved. This committee was instructed at the Santa Fe meeting to consider only three factors: namely—average potential, acreage and structural position—in arriving at the percentage of participation of each of the lease owners involved. The operators voted to allow the engineers to use their own discretion in determining what data should be considered in arriving at structural position factors.

Because of the bright prospects of some form of unitization being applied to the Hobbs field shortly, operators have voted to delay the taking of potential gauges for proration for 90 days from January 10, which was the closing date of the last proration period. Enforcement of the observance of a Sunday holiday on production, or its equivalent by choking wells over the weekly period, took effect January 10 by reducing the daily allowable from 35,182 to 30,150 barrels daily. A revised proration sheet compiled by Umpire C. G. Staley for the January 16-31 period allows a daily quota of 31,876 barrels daily, with 148 flowing wells and one pumper participating.

Texas Oil Leaders to Continue Support of Mid-Continent Group

Dallas, Texas.—Continued support will be given the Texas division of the Mid-Continent Oil & Gas Association by oil leaders and members representing all branches of the industry in Texas even though a new organization has been formed in recent months with a more representative membership. The executive committee of the former organization met here January 15, with Edward T. Moore, president, Simms Oil Company and also head of the Texas division, presiding. It was during this meeting that the committee pledged their continued support, and authorized the holding of the annual meeting early in February.

A resolution protesting against a proposed Federal tax on gasoline was drafted by the executive committee to be dispatched to all senators and congressmen representing Texas.

FOLLOWING the appointment of J. H. "Jim" Gallaway to the managership of oil engine sales of the Baldwin-Southwark Corporation, manufacturers of De La Vergne engines, G. A. Palmer, long connected with the company in Houston has been put in charge of pipe line and petroleum industry relations not only throughout the Gulf Coast and Mid-Continent territory but in the East as well.

News of the promotion of these two men, both veterans of the De La Vergne organization, will be received with gratification by their friends throughout the oil industry.

G. A. PALMER

Jim Gallaway has been connected with De La Vergne for 12 years and until his recent promotion was in charge of the Kansas City office, serving the municipal and industrial trade in that territory as well as the pipe line trade in Kansas and Oklahoma. His headquarters will be at the home of the company in Philadelphia.

G. A. Palmer has been with De La Vergne for 16 years, the last 15 of which were spent in Houston, his time being devoted exclusively to the oil pipe line trade. Palmer is a graduate of the Massachusetts Institute of Technology. His headquarters will remain at 1016 Second National Bank Building, Houston.

The De La Vergne organization has a long record of service in the oil industry, having built the first oil engine in America. The organization put the first oil engine in the petroleum industry, put the first engine into trunk pipe line service and built the first solid injection oil engine in America.

ROY H. BETTIS, 45, inventor of the Bettis Casing Protector and owner of Bettis Sales Company of Houston, died in a Houston hospital January 18. Mr. Bettis, who was well known to the oil industry, particularly in the Gulf Coast and in California, is survived by his mother and wife, a daughter, Roy H. Bettis, Jr., and four sisters.

HERMAN LANDGRAF, cementing specialist for Sarawak Oil Fields, Limited, is in Los Angeles on an extended visit.

RAY LYMAN WILBUR, Secretary of the Interior, and William Atherton DuPuy, as assistant in the department, are the authors of a new government booklet which deals with oil and gas in the United States.

AMOS L. BEATY, president of the American Petroleum Institute, will be the principal speaker at the annual dinner given in March by California Oil & Gas Association.

E. B. REESER, president of Barnsdall Oil Corporation, has been asked by Governor Rolph of California to make a survey of the California oil situation.

THOMAS A. PICKERILL, well known writer, addressed the Petroleum Accountants Society of Los Angeles January 14 on "The Co-operative Spirit in Action."

GEORGE L. BOLTON, who more than a quarter of a century ago was among the organizers of Turner Oil Company of Los Angeles, was killed in an automobile accident in that city, January 14. He was 68 years old.

Personal Mention—Men You Know

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GEORGE L. HARRINGTON, who has spent several years in Northern Argentina doing geological work, is spending a vacation in the United States, where he will be at 626 Eleventh Avenue, S. E. Minneapolis, until February 1. Shortly thereafter he will return to Argentina, where he is permanently located at Manuela Pedraza, Kilometer 1400, F. C. C. N. A., Province de Salta.

STANLEY GILL has announced the opening of offices at 505 Rusk building, Houston, Texas, where he will conduct a general consulting practice in chemical and petroleum production engineering, specializing in the prevention of corrosion of pipe line and petroleum production equipment.

Mr. Gill has had extensive experience in studying and coping with general production engineering problems in addition to devoting particular attention to combatting corrosion, his activities having included eight years of service with the Mellon Institute and the Gulf Oil Companies, and in recognition of his work he has been called upon by the American Petroleum institute to serve upon several of its committees and to write various papers, some of which have appeared in THE OIL WEEKLY. Prior to entering upon his present consulting work he was serving the Gulf Oil Companies at Houston in the capacity of corrosion engineer, being in the research department in charge of corrosion work.

Mr. Gill was born in Seattle, Washington, on July 29, 1899, and he was graduated from the University of Washington with the Bachelor of Science degree in chemical engineering. He then went to Columbia University and took a graduate course, obtaining the degree of Chemical Engineer at that institution. He later stayed at Columbia for a year as laboratory assistant in the chemical engineering department.

In February, 1924, he became associated with the Mellon Institute at Pittsburgh and was sent immediately afterward to Houston to do special work for Gulf Production Company, being transferred in 1928 into the organization of the latter company. During the entire period with the Gulf companies Mr. Gill worked on corrosion problems, and during the past several years his activities branched out also into the general field of production engineering.

STANLEY GILL

He has been on the American Petroleum Institute corrosion committee since it was organized in 1928, and has also served on other committees of that organization, being at present on a regional committee on development and production research, a division of the committee on drilling and production practice.

G. E. ROBINSON, head scout for Pure Oil Company in South Texas, Southwest Texas and Texas Gulf Coast, and one of the men who have played a prominent part in determining changes in nomenclature for oil fields of the Gulf Coast country, dates his career in the oil industry back to early twentieth century boom days of Spindletop oil field.

He likes to tell about the days when, as a boy, he sold samples of crude gathered from puddles and sumps at Spindletop to tourists who flocked into the field much in the manner that homeseekers poured into Florida when "real estaters" there were in their heyday, only in greater numbers. "I'd pick up all the empty bottles I could find in town," he said, "and hold them until the train carrying the tourists out to the field arrived there. Then I'd sell the bottles for two bits apiece, filling them first, of course, with stray oil from the gushers."

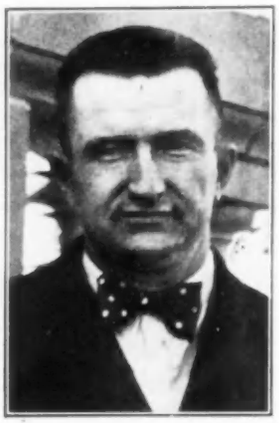
G. E. ROBINSON

Mr. Robinson was born in Orange, Texas, February 20, 1887, and has remained south of the Mason Dixon line since then, so far as residence is concerned. He was educated as an electrical engineer in Dallas and was engaged in that business from 1905 to 1919, when he seriously entered the oil industry as an independent operator.

Late in 1925 he entered the employ of Pure Oil Company as a scout. He has remained with that organization since, attaining gradually jurisdiction over more territory.

EDWARD A. HILL, consulting geologist of Florida, who has been in that state for approximately five years, has been retained by Islands, Incorporated, of Florida in connection with its 70,000-acre block of leases this firm recently acquired from the State of Florida in Choctawhatchee Bay, it is reported. Mr. Hill is geologist for a 4000-foot test being drilled near Cedar Keys, Florida, and is one of the best informed geologists on Florida structures, it is said.

DONALD E. COUTY, consulting geologist, has opened an office at 703 Tower Petroleum Building, Dallas, Texas, and will specialize in development in East, South and Southwest Texas. Also at the same address the geological firm of Hudnall and Pirtle has opened an office under the management of Mr. Couty. The firm Hudnall and Pirtle has been operating in Texas for six years, and at present is concentrating its activities in East Texas, maintaining general offices and headquarters at Tyler.



ROBERT H. DOTT

S. W. LOWMAN

Tulsa Geological Society Names Officers for 1932

Tulsa.—The Tulsa Geological Society held its annual meeting Monday, January 11, at which time the following officers were elected to serve during 1932: Robert H. Dott, consulting geologist, president; S. W. Lowman, geologist, Mid-Continent Petroleum Corporation, first vice president; Ralph A. Brant, geologist, Atlantic Producing Company, second vice president; and T. C. Hiestand, geologist, W. C. McBride, Incorporated, secretary-treasurer. The council will be composed of Elfred Beck, chief geologist, Producers and Refiners Corporation; C. D. Nuffer, geologist, Carter Oil Company; L. G. Keppler, consulting geologist; and R. S. Knappen, technical advisor to the executive department, Gypsy Oil Company. Mr. Knappen is the retiring president of the society. Following the business meeting Mr. Knappen gave an illustrated talk on the "Geology of Northwestern Alaska."

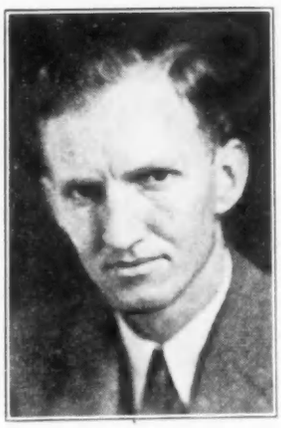
During the last three months of 1931, the society, through its committee chairman, Harry Wright, collected $155,000 by contribution for the Tulsa school-lunch fund. With the cafeteria system installed in the public schools it is possible to serve to each child a generous lunch of wholesome food for the surprisingly small sum of 10 cents per meal per child. This means that the Tulsa Geological Society was responsible for the feeding of 1550 school children through the use of funds collected at the weekly luncheons.

T. C. HIESTAND

RALPH A. BRANT

G. C. FRANCISCO, JR., Houston district land man of Sun Oil Company, is young—he has been in the oil industry only since 1924, the year he graduated from Rice Institute with a B. S. degree in chemical engineering—but his work has gained sufficient recognition among his contemporaries to place him on the committee for changes in nomenclature of Gulf Coast oil fields.

Mr. Francisco was born in 1903 at Dayton, Ohio, where he received his elementary education. Then the long, lean, lanky, red-headed Francisco went South, not with anything, but to finish high school education in Mineral Wells and Dallas.



G. C. FRANCISCO, JR.

He went into the geological department of Sun Oil Company in 1924. This department immediately cashed in on the physical characteristics which rendered Francisco admirably equipped to wade South Louisiana and Southeast Texas swamps in search of surface indications. A good wader was much better than a pirogue for that work. He did not capsize as often, and did not require bailing out when he did.

Mr. Francisco was transferred to the company's scouting department after his career as "swamp wader" had proven a success and scouted the same territory until January, 1926, when he was transferred to Southwest Texas. He scouted Southwest Texas out of San Antonio and Corpus Christi until July, 1928, when he was called back to South Louisiana.

In September, 1930, he was called to Houston to become Houston district land man, which position he now occupies.

J. W. STEELE is spending a short time in Casper, Wyoming, with relatives having just returned from Portuguese West Africa where he was in charge of development work for Sinclair Exploration Company. Mr. Steele was formerly supervisor for the mineral leasing division of the U. S. Geological Survey with Casper headquarters. It is not known whether the company's operations resulted in any worthwhile discoveries in West Africa as so far Mr. Steele has refused to give out any information concerning the same.

PAUL HART, superintendent for Taranaki Oil Fields, Limited, of New Zealand, is recovering from a serious operation which was performed in a Los Angeles hospital. He has been spending some time in California.

P. F. Graves, general attorney for Kirby Petroleum Company, Houston, for the past eight years, has resigned to open general law offices in the Esperson Building, Houston.

W. C. STROUBE of Stroube & Stroube, operators in the East Texas field with headquarters at Corsicana, Texas, was painfully injured in the neck and face by the accidental discharge of a shotgun while hunting near Tyler, January 15.

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, ***Staff Representative, Tulsa, Oklahoma***

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Oklahoma City Operators Comply With Allowable Cuts

Oklahoma City—Operators in the Oklahoma City pool have responded to the last two reductions in allowable production with gauges considerably below the allowed figure, but it is doubtful that this method of curtailing state production can be continued indefinitely. Under the order effective January 1, 160,000 barrels were allocated to the pool. During the nine days that followed the average did not exceed 144,630 barrels. On January 10, an emergency order was issued reducing allowable to 120,000 barrels. Operators responded with a cut to 103,965 barrels daily for the week ending January 16, a drop of 40,665 barrels below the figure for the preceding week. In issuing the emergency order the corporation commission announced that a further hearing would be held January 26, at which time ample opportunity would be given to hear those who oppose the order. In the meantime B. G. Patton, president of Plains Petroleum Company and a member of the proration committee of three, has filed a petition opposing the action in behalf of his company.

Among the charges that are cited is discrimination between pools or common sources of supply, giving as an illustration the Seminole district with 135,000 barrels daily allowable as against 120,000 barrels for Oklahoma City. It is pointed out that the latter field, with 80.1 per cent of the state's potential, is allowed only 28.6 per cent of the state's allowable while Seminole, with 7.5 per cent of the state's potential, is allowed 32 per cent of the allowable. Pointing out that when early proration orders were made to govern the Oklahoma City pool, there was an insufficiency of transportation facilities, the petition shows that there is now a pipe line capacity of 340,000 barrels daily and a loading rack capacity of 135,000 barrels daily, making a total of 475,500 barrels which can be moved daily. It will be further shown that the largest movement to date did not exceed 285,000 barrels daily. Seminole potential is shown as 294,273 barrels daily and adjusted potential for Oklahoma City, 3,152,000 barrels daily. Seminole, with a daily allowable of 135,000 barrels, gets 44 per cent of its potential while Oklahoma City, with 120,000 barrels allowable, gets only 3.71 per cent. The petition is set for hearing on January 26, along with the general hearing previously announced.

Two wells received their initial gauges during the past week and two others were bailing for completion. As of January 16, with 862 completed wells, 111 sand wells produced 84,270 barrels and 24 Arbuckle limestone wells, 5742 barrels for a total of 90,012 barrels for the day. Of the 135 wells which were open, 101 were flowing natural, 32 were on gas lift, and two were pumping.

Continental Oil Company, Anderson-Kerr's St. Louis 1, NE NW SW SE Section 34-12n-3w, was completed at an estimated 40,000 barrels of oil and 45,000,000 gas from Wilcox sand at 6297 to the total depth of 6510 feet. Capitol Producers and Refiners' Hills 1, CS½ SE NE SE Section 4-11n-3w, bailed down 3800 feet and was estimated at about 10,000 barrels in the absence of initial gauge; total depth is 6530 feet. This is the second completion in the section and a test which was not expected to be among the larger producers since it is very near the edge of the pool. Slick Estate's Classen-Edwards 7, CSE SW SW Section 3-11n-3w, produced 3932 barrels the first four hours, production coming from 123 feet of Wilcox sand topped at 6374 feet. The gas gauge was 28,000,000 cubic feet. Phillips Petroleum Company's Brittain 1, NW NE SE Section 35-12n-3w, bailed down and cleaned into the pits with no gauge. Total depth is 6400 feet in Wilcox sand. Phillips Petroleum Company and Sultan Drilling Company were bailing in Classen 1, SE SE NW Section 15-11n-3w.

Pittsburg County Wildcat Stops After Four Years Careful Testing

Tulsa.—The past week brought to a close what was perhaps one of the most valient attempts that a small Oklahoma operator has ever made to thoroughly test a wildcat area from top to bottom. Early in 1927, J. L. Pattison et al spudded McDuff 1, SWc NW SE Section 32-9n-16e, six miles southwest of Eufaula, northeastern Pittsburg County. It was abandoned during the past week after penetrating more than 100 feet of limestone which geologists correlate as Arbuckle. During the more than four years that elapsed between spudding and abandonment, the test was shut down many times but never for more than a few weeks. It is said that Mr. Pattison, in the drilling of one or two other tests, stopped at points which later proved to be only a few hundred feet above production and that he was determined to carry this test until no further question could be raised. Drilling was done with cable tools and it may safely be said that no production was passed up other than several showings of gas which did not prove commercial. Total depth was 5902 feet.

Seminole Again Active With Tests at Fish and Carr City

Seminole.—Seminole has taken on an active appearance during the past two weeks with several new wells in the Fish and Carr City pools. In Carr City there are eight drilling wells while Fish has five drilling and one rig. Empire Oil & Refining Company's Fish 2-D, SWc SE SE Section 19-7n-8e, had top of the Wapanucka at 2967 feet and first show of oil and gas at 3008 feet after setting 8¼-inch casing at 2972 feet. At total depth of 3034 feet the well flowed 1174 barrels in 24 hours. Stanolind Crude Oil Purchasing Company is connected. The same operator's Davis 1, NW NE NE Section 30-7n-8e, had Wapanucka at 2955 feet and sandy limestone from 2999 to 3012 feet, from which it produced 1010 barrels in six hours flowing time. Eight-inch casing is cemented at 2961 feet.

Gypsy Oil Company's C. Coker 7, NW SW SW Section 2-8n-5e, one of the eight active tests in Carr City, had a

show of oil in Hunton lime at 3963 feet and was running eight-inch casing after logging Sylvan shale at 3981 feet and Viola limestone from 4060 to 4075 feet.

Lincoln County

Hilton Phillips' Phillips 1, SW SW NW Section 2-14n-3e, wildcat test located about 2½ miles northwest of the West Chandler pool was still trying to drill by pipe with total depth at 4843 feet. Barnsdall Oil Corporation et al's Community-Taylor 1, CSW NW Section 17-14n-5e, wildcat test about two miles southwest of the Davenport pool and within a short distance of gas production, topped the Prue sand at 3543 feet, cored first oil at 3549 to 3560 feet, and recovered a saturated core from 3563 to 3581 feet. Coring from the latter depth to 3594 feet, operators recovered a dry sand and were drilling ahead. Atlantic Oil Producing Company's Beebe 1, NE SW SW Section 8-13n-6e, is a derrick located about five miles southwest of the Sac and Fox Agency.

Three Central Western Kansas Tests Due for Early Completion

Wichita.—Three tests in the central western Kansas or Barton-Ellsworth arch area encountered the pay during the past week and are due for completion within the next few days. The most interesting of these was Derby Oil Company's Berscheidt 1, NW NE SE Section 12-20s-11w, south offset to Charles Hilligos et al's Isern 1, which was completed for about 1000 barrels several weeks ago. The Berscheidt 1 encountered Arbuckle "Siliceous" limestone from 3289 to 3326 feet and after swabbing the head gauged only 110 barrels the first six hours. It is being estimated at seven barrels per hour. Midwest Exploration Company's Berscheidt 1, CNW SE Section 12-20s-11w, a short distance southwest of the Derby test, was drilling below 3288 feet with nothing showing. Allison and Fitzwilliams et al's Stratman 1, CSW SE Section 23-16s-10w, had 3200 feet of oil in the hole when one foot into the lime at 3391 feet. After encountering the pay the 10-inch casing was parted and operators have recovered 40 joints. This test is about one mile east of the discovery well in that township.

Derby Oil Company's and Alladin Petroleum Company's Stoltenberg 1, SE SW NW Section 22-16s-10w, completed for about 75 barrels per hour in November, 1931, was pumped five days last week. The last gauge was 1524 barrels in 24 hours, oil testing 45 degrees corrected. Production is coming from lime at 3347 to 3365 feet. Stanolind Crude Oil Purchasing Company is connected.

Charles Hilligos et al's Isern 1, SW SE NE Section 12-20s-11w, is reported to have produced 19,000 barrels during November and December, but as yet no official potential has been set.

Ritz-Decker-Garrett

E. B. Shawver et al's Lively 2, SW NW NW Section 21-19s-1w, had chat formation from 2900 to 3000 feet from which it gauged 37,000,000 cubic feet of gas and an estimated 100 barrels of oil. This test is located inside the limits of Canton and is the first in the sector to produce oil from the chat. Other wells to the west have produced large volumes of gas from the chat and one well is producing oil from Viola limestone. The area around Canton probably will be similar to the Decker field where large gas wells were completed on the structurally higher portions and combination oil and gas wells farther down the flanks.

Shell Petroleum Corporation was rebuilding derrick after a fire at its Fred Johnson 1, CSE SW SW Section 35-19s-3w, wildcat test about two miles southeast of McPherson and six miles north of Voshell. Top of the chat was found at 2984 feet and eight-inch casing cemented at 2986 feet. At the time of the fire it was reported making about 1,000,000 feet of gas. This test is located on a core-drilled structure which has been held by the company for several years and lease requirements were responsible for the company's only wildcat activity under its own name during 1931, although it is the holder of a large number of leases in the area and "farmed out" a considerable amount of acreage during 1930 and 1931.

Stafford County

Rosenthal, Stanolind and Amerada have resumed drilling in their Gray 1, CNE Section 11-24s-13w, Satfford County wildcat test located about two miles southeast of the town of St. John. It was this test which in the early part of December, 1931, attracted considerable attention when it had 1500 feet of oil in the hole and was estimated at five barrels per hour from 3749 to 3758 feet, supposedly Arbuckle "Siliceous lime." A green shale was topped at 3960 and the drill was in this formation when last reported drilling below 4000 feet. Nearest production is in Midwest's Richardson 36, SE SE SE Section 36-22s-12w, rated at about 1200 barrels daily.

Test Two Miles South of St. Louis Pool Promising

Seminole.—Carter Oil Company's Monnette 1, SW SW SW Section 35-7n-4e, gave indications at the end of the week of being a commercial producer from Simpson dolomite at 4230 to 4260 feet. This test has been of interest because of its location on a seismograph "high" approximately two miles south of production in the St. Louis pool. After being swabbed at the rate of about 61 barrels per hour it headed and made a flow of 146 barrels of typical Seminole Simpson oil. It is now shut in for additional tankage. Mid-Continent Oil Corporation's Farmer 1, SE SE NW Section 2-6n-4e, was standing with six-inch casing cemented at 4385 feet. After encountering oil and water in Simpson dolomite it was deepened to 4420 feet in Wilcox sand which was topped at 4418 feet. Operators were carrying approximately 3500 feet of water and 100 feet of oil when the Wilcox sand was penetrated so it is impossible to determine the worth of that formation until a water shut-off is made. On the basis of corrected tops the following data have been reported: Mayes limestone, 2588 feet; Woodford shale, 2688 feet; Hunton, 2912 feet; Sylvan shale 2973 feet; Viola limestone, 3078 feet; Simpson dolomite, 3198 feet; and Wilcox sand, 3376 feet. Elevation is 1042 feet. Compared with the Farmer 1, Carter Oil Company's Monnette 1, is 101 feet structurally higher on top of the Simpson dolomite. See page 54, January 1, 1932, issue THE OIL WEEKLY for location of tests. Although both tests are located on a geophysical "high" and appear to be separated structurally from the St. Louis pool, it cannot be definitely determined at this time and the find may develop into an extension of that pool.

Tulsa.—Orders have been issued by the Kansas Public Service Commission reducing the output of the Eastborough pool of Sedgwick County to 86 per cent of present production. This is the first proration order for the pool. Another order limits the output of the Voshell pool to its pipe line capacity.

News From California Fields

BRAD MILLS, ***Staff Representative, Los Angeles, California***

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California Agency Asks for "Living Price for Crude Oil"

Los Angeles.—The Oil Producers Sales Agency of California has issued a public appeal for "a living price for crude oil, which shall at least be sufficient to enable the small producer to operate without loss and to produce his fair share of oil in keeping the total production of the industry within reasonable limits of the demand."

The appeal further adds that "the right to operate without loss is generally recognized in respect to the operation of public utility and public service corporations and should be applicable in this particular. Any other course would invite a flood of excess production, destructive drilling competition, competitive price wars, tax evasion, and possible bankruptcy of the entire industry, to say nothing of the ruinous effect upon the general business structure of the state."

The appeal is prefaced by a lengthy letter to the industry and the people of California, which shows the importance of the oil industry to the entire economic structure of the state.

Operator Fails to Develop Gas In Buttonwillow District Test

Bakersfield, Calif. — Milham Exploration Company has been unable to develop gas in Crites 1, a test in the Buttonwillow district which was drilled to 4496 feet, and has shut down the well indefinitely. The zone showed some gas but caved and heaved so badly that further testing was impractical. The company is considering the deepening of Kern 2, having moved in equipment for further operations.

The Buttonwillow field is one of the few gas producing areas in California which does not also produce oil. The first gas was developed several years ago, but the supply was not adequate to justify the construction of major pipe lines to the principal cities. The field has become an important cog in the gas system of the state, however. Drilling in the district has been done under difficulties, especially in the deeper wells. Heaving shale has been conquered only a few times, and no oil has been found above or below the principal gas producing zone.

Union Oil Continues Successful Deepening Program at Dominguez

Los Angeles.—Union Oil Company continued its very successful deepening program in the Dominguez field, with the completion of Hellman 17 as a 3500-barrel producer. The gross flow was considerably higher, but the average cut was around 15 per cent. Completed at 4879 feet, Hellman 17 might be classed as an intermediate zone producer, having been drilled somewhat deeper than the first completions and finished shallower than one or two recent completions. Hellman 17 is flowing through casing and is one of the best completions in the lower Callender zone.

Shell Oil Company's Reyes 41 is being deepened, following an open hole production test at 4815 feet. This well flowed at the rate of 1000 barrels and is now being deepened at 4875 feet.

Dominguez has become a factor in deep zone production in the Los Angeles basin, but drilling is expected to taper off as soon as lease requirements are met. The field potential has been raised about 10,000 barrels by recent completions.

El Nido Test Considered Most Interesting in Los Angeles Basin

Los Angeles.—Mohawk Petroleum Company's El Nido test, located a short distance north of the Torrance field and south of Lawndale, has become one of the most interesting wildcats in the Los Angeles basin. This well was located after extensive geophysical work by geologists who also worked out the structure along ordinary geological lines. Production is expected above 5000 feet. A geological high was found, the structure being less than two miles south of the Lawndale field. Less than 400 acres are included in the structure, but enough drilling has not been done to definitely determine the size of the prospective field. Several wells have been drilled around the test, and these logs have been helpful in determining the location of the structure. The Miocene is expected above 4500 feet and a light oil expected by the company.

L. C. Hunt has made a location on Section 29-3-14 and will start an offset to Mohawk Petroleum Company's Pavey 1 if good showings are encountered in Pavey 1. Other wells may be started if the original test cuts oil and gas strata.

Middle Dome Completion Causes Usual Geological Speculation

Los Angeles.—Apparent completion of Petroleum Securities Company's Burbank 1 on the Middle Dome at Kettleman Hills has caused the usual amount of geological speculation. This development comes one step nearer the South Dome and Lost Hills areas and draws the frame a little tighter around this picture.

Associated Oil Company's Whepley 2 on the north plunge of the North Dome penetrated 1500 feet of Temblor sand to the top of the Leda fossil zone, where it was finished. It was completed here because the Leda fossil zone marks the bottom of the Temblor sand in Domegine Creek, and on this basis there was no need to go deeper. Here geological speculation comes in as to the conformity of the contact, i. e., the contact between the Temblor sand and the underlying Kreyenhagen shale.

If this contact is conformable, it is correct to complete wells at the Leda fossil zone. If the contact is unconformable, there is the possibility that more sand underlies the Leda zone. This point gains strength at Wagon Wheel Mountain in Kern County, where 1900 feet of sands and shale occur between the Leda zone and the Kreyenhagen shale.

Petroleum Securities Company's Burbank 1 penetrated over 1700 feet of Temblor sands and failed to reach the

Leda zone or any other marker which might indicate that the Temblor was being approached. Erosion has erased the valley side of Wagon Wheel Mountain so that the Temblor thickness above the Leda zone is not measureable. The thickness, therefore, of the Temblor above the Leda zone is not known in the Middle and South Domes.

The black eye for the South Dome at this time is Ohio Oil Company's Smith 1. This well penetrated over 1100 feet of Temblor sand. It did not reach the Leda zone and is accordingly well over 1900 feet too shallow to touch the Kreyenhagen shale.

In regard to Lost Hills, where Lincoln Petroleum Company, General Petroleum Corporation and Universal Consolidated Oil Company: In Ohio Oil Company's Smith 1, there is at least 1200 feet (probably more) of gray shale immediately below the Pliocene sandy material (Etchegoin). At Lost Hills, this does not occur, the wells passing through blue sandy Pliocene material into brown shales of the Miocene. Therefore, the Lost Hills and the South Dome have a different geologic column. It is therefore speculative as to whether or not they are comparable. It is possible that they are separate structures in the broadest sense of the word. The three wells mentioned above failed to reach the Leda zone and so are also well over 1900 feet short of the Kreyenhagen.

In conclusion, the 1900 feet between the Leda fossil zone and the Kreyenhagen shale, are made up of sands and shales. It is possible that these shales form such an impervious layer that oil generated by the Kreyenhagen shale is trapped in sands beneath them. Geological speculation, therefore, wonders whether the South Dome and Lost Hills areas are completely tested until this 1900-foot-section has been penetrated. At least this formation seems to produce the oil in the shallow Devil's Den field.

Santa Barbara Mesa Tests Will Not Result in Activity

Santa Barbara, Calif.—The two or three wells drilling in the Santa Barbara Mesa field are not regarded as tests which will lead to an increase in activity in this very doubtful district.

Strickland and Tippett drilled to 4885 feet in Duncan 1A, a deep test on Section 19-4-27, and reached the Sespe sand before shutting down the well for a time. The surface pipe has been swedged out and a short string of 9⅝-inch casing will be run. This deep test should have an important bearing on future development in the district.

Cliff Petroleum Corporation has cleaned out Meigs 1 to bottom at 2085 feet and will install a pump for a production test. More than 100 feet of 6⅝-inch liner was run and landed on bottom.

The Santa Barbara Mesa field will be remembered as one of the outstanding failures in 1929. The first well was completed with a good flow of heavy oil, but another such completion was never recorded. Even the discovery well soon went to water.

San Diego, Calif.—Independent interests are leasing acreage in different parts of San Diego County, particularly near Oceanside and Vista, where two tests will be drilled when financed. Stuart McNair, consulting geologist of Los Angeles, has been active in the Vista district and will make a location for a test in the area. The general district is hilly and offers some promise. C. B. Barnhardt has leased several hundred acres near Oceanside and is planning a test near this city. The proposed test is near a well which was drilled to 3650 feet and shut down. This well has not been abandoned outright, but it has been theoretically abandoned for more than three years.

Optimism Over Torrance Well Fades As Production Declines

Los Angeles.—Enthusiastic reports were circulated concerning the recent semi-completion of Higgins Brothers' Hamlin 1, a deep test in the Torrance field, but the rapid decline of the well and the increased cut soon branded this optimism as untimely. Hamlin 1 was drilled to 4660 feet and tested in about 25 feet of oil sand above the schist. A small amount of light oil was obtained which led to the report that the much-sought light oil zone had been found. The lease was held at one time by Superior Oil Company, but was later farmed out in small leases. Hamlin 1 produced heavy oil above 3750 feet and was deepened on the theory that a light oil zone should be found above the schist.

Operators eager for light oil production in a heavy oil field naturally colored the prospects some to fit the occasion. The discovery did make possible a townlot drilling campaign, but the increase in water in Hamlin 1 removed this probability. Schist was known to exist at a reasonable depth, and discovery of a thin zone carrying light oil immediately above this body was not as important as pictured by many.

Important Test to Be Drilled On Structure Near Camp Kearney

San Diego, Calif.—A test of considerable importance will be drilled by J. E. Koeberle and associates on a structure located near Camp Kearney and about 14 miles northwest of San Diego. The anticline has been mapped and drilling is expected to start this spring. The structure embraces up to 1800 acres, and Koeberle and associates have leases on a large part of the total.

Production is expected above 3000 feet in the Pliocene, overlaying the Eocene. Oil seepages occur on the structure and samples of sand taken a few feet from the surface carry a strong odor of gasoline.

Some drilling has been done around San Diego, but most of these tests were abandoned short of conclusive depths. In some districts a tough conglomerate has made drilling very slow and expensive, but the Camp Kearney structure may prove to be free from this trouble.

Operator Still Trying to Pull Lower Portion of 5¾-Inch String

Coalinga, Calif.—Petroleum Securities Company is still trying to pull the lower portion of the 5¾-inch flow string from Burbank 1, Middle Dome test which recently proved the structure, after milling down the small string and pulling to 5160 feet. An impression of the 8⅝-inch water string was taken and this casing was found to be squeezed in at the top of the 5¾-inch flow string—around 5160 feet—but the larger string had not collapsed. After the smaller flow string is recovered and the 8⅝-inch casing is rolled out, another string may be run in an effort to shut off the water which prevented a successful production test. The well is not in good mechanical condition and completion will be difficult at best. Burbank 1 was drilled to 9332 feet and plugged back to 9208 feet. Production was 1200 barrels of 51 gravity oil and more than 1000 barrels of salt water.

North American Oil Consolidated's Blauvelt 1, outpost test on the North Dome, has been held up at 9500 feet with a difficult fishing job. The drill pipe froze at 8800 feet but did not part, and it is more a matter of loosening this string than of making a recovery. This well has become the deepest test drilled at Kettleman Hills and is one of the deepest ever drilled anywhere.

East Central Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

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Wolters Warns Against Well Completion Without Connections

Kilgore, Texas.—At a meeting of representatives of oil purchasing companies held at military headquarters here January 19, Brigadier General Jacob F. Wolters, made the following statement:

"I request that you allot among the various purchasers the wells that are without connection as reported to these headquarters as of this date. I shall not insist on the acceptance of connections of wells that will come in on and after this date. Operators drilling and bringing in new wells, as well as those losing connections, will have to make their own arrangements. No new wells should be brought in without the operator having either a purchaser or storage for his oil."

Unconnected wells reported were 27, each of which was referred to some particular company to either connect or find connection. The pipe line committee ceases to function with 56 wells not cared for.

East Texas Development Is Hampered By Adverse Weather

Longview, Texas.—Handicapped by bad roads and flood waters, operators in East Texas have been forced to alter development programs during the past two weeks. Operating costs have mounted materially through trying to negotiate the oil field roads with heavy equipment, while many lease owners have joined in financing the re-construction of roads that have become almost impassable for any type of vehicle.

Many producing wells have been submerged by Sabine River, Rabbit Creek and other streams cutting across the field, thereby creating a hazard from an unexpected source. Floating objects carried by the backwaters of these streams have threatened to break connections of wells underwater, as all owners did not have time to shield the connections with timbers before the water overran the leases.

Magnolia Petroleum Company's John Radford 1, located in the southwest portion of a 252-acre lease and in the north end of the T. Johnson Survey, registered an unusually large flow for a west edge producer in the Gregg County section of the Kilgore area. Radford 1 gauged 128 barrels pipe line oil per hour through three-quarter-inch choke on tubing from sand at 3704-3707 feet, with 190 pounds back pressure while flowing. The rock pressure registered 320 pounds when the well was closed in after making its initial test. On the northeast portion of the lease, Radford 2 flowed 140 barrels per hour through four-inch line on casing and three-fourth-inch choke on tubing from sand at 3662-3673 feet. Both of these wells were cased with 5¾-inch pipe. Magnolia Petroleum Company is lagging behind on its field work, having 13 operations, including seven drilling tests, with 233 completed wells to its credit. However, the latter figure includes wells recently acquired from Vacuum Oil Company.

Another minor extension to the east side of the Longview area in the D. Sanches Survey late last week when Bond & Gillespie et al's Johnson 1 showed for a small oil producer after logging sand at 3577-83 feet followed by broken sand and shale to 3604 feet. These operators are credited with having assumed a $10,000 oil payment out of one-fourth of the first production for a seven-eighths interest in the 10-acre lease.

Sun Oil Company's John Hargraves 2, located on the north end of the Longview area in Upshur County and in the north portion of a 200-acre lease, was completed last week flowing 60 barrels oil per hour through open two-inch tubing, with the hole bottomed at a sub-sea depth of 3312 feet. The oil sand was topped at 3699 feet, and penetrated only three feet. J. A. Johnson et al have a north offset to this producer that is making water in flowing by heads.

Shell Petroleum Corporation announced eight new locations during the week for the Longview and Kilgore areas, but progress on most of these has been help up. Use of taper tubing is being continued by this company after having made experimental tests on several completions recently. A small initial production rating is usually earned by wells equipped in such a manner. Shell Petroleum Corporation's C. C. Landers 9, located near the Gregg-Upshur County line, gauged 15 barrels oil during first half-hour, open flow test through taper tubing from sand at 3660-3687 feet, with 5 3/16-inch casing cemented at 3654 feet. About 2489 feet of one-inch, and 1179 feet of 1¼-inch tubing was inserted to make the taper string. This company has 122 completed wells in the field, with 22 operations, including eight active tests.

Tidal Oil Company has lately advanced to near the top of the list on number of active drilling tests, having started the present week off with 12 and derricks up for two more. This company has 96 completed wells in the field.

Developed and Undrilled Leases In East Texas Are Very Popular

Longview, Texas.—Developed and undrilled leases in the East Texas field were never more popular with major and independent prospective purchasers. Further tightening of proration restrictions in the form of lower production quotas per well has not exerted an adverse influence on

East Texas Production

Official data on proration enforcement in the East Texas field, as compiled each day by the military authorities, is listed below:

Period ending 7 a.m.	Total wells completed	Wells reporting prod.	Wells not reporting: Wells off prod.	Wells not reporting: not reporting	Pipe line runs	Total production	Daily average per well
January 11	3760	860	2700	198	90,152	86,306*	100.3
January 12	3769	3637	93	39	274,040	359,576	98.8
January 13	3776	3607	113	56	.....	358,010	99.0
January 14	3787	3564	137	86	330,452	358,521	100.6
January 15	3802	3514	162	126	277,826	348,524	99.4
January 16	3819	3621	176	22	326,686	364,134	100.5
January 17	3828	3379	218	231	.....	345,659	102.7
January 18	3854	842	2828†	184	.....	83,020*	98.6

*Production off because of Sunday shut-down.
†Sunday shut-down 2791; 37 down for physical reasons.
Note—Pipe line runs include receipts plus crude used as fuel and road oil and for washing in wells.

lease prices as would be normally expected. It can be safely stated that there are more bonifide prospective buyers of leases canvassing the field than there are sellers. The bulk of the latter are part interest lease owners.

Lease values have worked up to a level that deals involving $3000 per acre, part cash, for choicely located properties are no longer considered exhorbitant. Development of the field has progressed to a point that sand thickness, porosity and prolificness can be estimated fairly close. Operators are aware of the fact that few opportunities prevail that will permit the purchase of semi-developed and virgin leases under such conditions, therefore appropriations that would normally be expended for wildcat exploration work in various sections of the country are being attracted by this Woodbine sand area.

Four completed wells located on drilling sites, ranging from three-quarters of an acre to two acres in area, in the Longview section of the East Texas field have been sold by W. A. Moncrief and Eddie A. Showers and associates to Stodel Oil Company (J. B. Stoddard and Delaney), Dallas, for a reported cash consideration of $100,000. The above two operators were part owners of the discovery well of the Longview area, and acquired these small sites afterwards. The above deal involves a well on the T. M. Collins three-quarters of an acre and also a one-acre lease, straddling the M. Mann and G. W. Hooper surveys, Upshur County; T. Snoddy two-acre lease, Block 3, Snoddy subdivision, Wm. Robinson Survey; and W. McCrary 1.4-acre lease, W. H. Castleberry Survey, Gregg County.

A deal involving the sale of the Guy V. Lewis Estate et al's S. S. Cook 40-acre lease and one well, which was the first oil producer completed in Smith County section of the East Texas field, to J. W. McCullough Oil Company of Texas and others for a total consideration of $125,000 was expected to be consummated over the past week-end at Tyler. It is reported that the deal involves a cash payment of $25,000, and an additional $100,000 payable out of one-fourth of the first seven-eighths production. Ed. H. Moore, former president Independent Oil & Gas Company, and C. L. McMahon, both of Tulsa, are reported to be sharing in the purchase of this property, which has a number of direct offsets to be drilled immediately. A 20-acre tract held by the Guy V. Lewis Estate and others about one-half mile north of the above tract is reported to have been contracted for by J. W. McCullough Oil Company of Texas and M. L. Massingill, Fort Worth, for $58,000, including $55,000 payable out of oil.

Another deal involving proven acreage in the Joiner section of the field is the reported purchase by Tulsa Oil Company of the east 59-acre lease out of the M. L. Thompson 123-acre tract, I. Moore Survey, located on the Smith-Rusk County line, for $50,000 cash and an additional $30,000 payable out of one-fourth of the first production.

Central Commercial Oil Company of Tulsa, a new entrant in the field, recently was assigned lease on the A. A. King 137-acre tract, M. Tennison Survey, Gregg County, by Shell Petroleum Corporation, with the latter reserving a one-quarter, over-riding royalty. Although located on the west flank of the Kilgore area, and structurally low, this large lease is now considered entirely proven for production since the completion of a big well last week a short distance below the southwest corner, while there are two wells offsetting the northwest corner.

Pat Barkley & Meadows, producers and drilling contractors, are credited with having acquired Republic Production Company's Alexander 10-acre lease, located in the D. Sanches Survey and on the east edge of the north portion of the Longview area, paying $3500 per acre out of one-fourth of the first oil and gas production.

Contract on Advance Royalty Should Provide "No Politics"

Houston.—Humble Oil & Refining Company, which recently completed a producing wildcat well on the O'Connor ranch near Victoria, Texas, has made an agreement with the owner of the property whereby the company will pay an advance royalty for a period of six months in return for the privilege of not producing the oil for that time. In the mean time the company is drilling another well to determine, if possible, the limits of the field.

The agreement entered into provides that Humble Oil & Refining Company shall pay the owner each month in advance half of the royalty due on a basis of an anticipated production of 2000 barrels per day, at the price commonly in effect.

It will be recalled that this company paid Governor R. S. Sterling advance royalty in return for the privilege of not having to produce the oil or do additional drilling for a certain period of time on his Moss Bluff property before Sterling become governor. At the hearing in Austin last summer this advance royalty agreement with Governor Sterling, which had been published in the trade press at the time it was made, was under fire.

After the agreement had been drawn up and presented to Mr. O'Connor for signature by an official of the company, the official laughingly remarked:

"There is just one additional thing, Mr. O'Connor, that really ought to be in that instrument."

"What is that," asked Mr. O'Connor in surprise.

"We really ought to provide in the contract that you shall not run for governor."

Eastborough and Voshell Pools Proration to Be Announced Soon

Wichita.—The Kansas Public Service Commission announced at the close of its meeting on January 14, that a decision would be forthcoming within 48 hours regarding the proposed proration of the Voshell and Eastborough pools. Operators of the two pools refused to voluntarily accept a cut of 40 per cent at a meeting held late in 1931, and it was with the purpose of granting further hearing that the meeting of January 14 was held.

Rush Greenslade, vice president of Gypsy Oil Company, protested against the cutting of Voshell on the plea that it was settled production yielding water in such quantities as to make it economically unsound if produced at any figure drastically lower than its present production. J. A. Vickers, president of Vickers Petroleum Company, made a similar plea for the Eastborough pool.

In view of the drastic curtailment of production in the Ritz-Decker-Garrett and Schurr areas, it is thought that some measure of the proration burden should be carried by Eastborough and Voshell if such can be done without materially injuring the wells.

Houston.—Yount-Lee Oil Company's Cade 24 in the High Island field of Galveston County has been coring oil bearing formation since a depth of 5276 feet was reached. Eight feet of the formation have been passed through, and the well should be due for a production test soon. The same operator's Cade 25 is drilling sand and lime rock below 4650 feet.

Salt Water Encroachment Offers No Immediate Threat in East Texas

By H. H. KING
Staff Representative

TYLER, Texas.—Salt water encroachment upon the East Texas field has not fulfilled expectations, and offers no immediate threat of becoming a menace to well operations except on comparatively few leases situated on the west and north flanks of the oil area. Non-participating operators that are looking forward to the day when an operating handicap will be placed on the East Texas field will not have their wishes fulfilled by water entrusion for some months hence. There is no doubt but what the water line is moving up by easy stages, but with rigid proration enforcement eliminating the usual coning and channelling developments in the porous sand there is more resistance to the water's advance.

Authorities on underground conditions and the water situation in this field predict that with each 25,000,000 barrels of oil withdrawn the water level will rise about one foot. The oil recovery has been approximately 110,000,000 barrels to date, and the current rate of oil drainage allows the water to advance one foot each 71 days, using the above rate of advance as a yard stick. Should this estimate on the rate of water encroachment prove fairly accurate it can be readily seen that many months must elapse before bottom hole water becomes a menace to the field.

Less than 50 wells out of a total of more than 3800 completed oil producers in the field are now showing from a trace to a large percentage of salt water. A survey of the water situation as itemized in the accompanying table reveals that the comparatively few wells making water average from 15 to 20 per cent fluid in fulfilling 100-barrel daily proration allowances. However, the volume of salt water production is not as great as such figures would indicate because of a number of the water wells not being on steady production. In addition to listing the wells that are showing water with the oil, a number of producers that have shown cut oil in the past are included in the table.

Spotting of these water wells on a map of the field will exert more emphasis on the fact that the producers making cut oil are situated without exceptions on or near the west and north edges of the oil area. The east and south flanks of the field are immune from water troubles, as is also true of the inside leases. Occasional reports about water showing up in small producers given shots on the east flank of the field have been found to be due to faulty casing seat permitting water from above to enter the hole.

Salt water production in the field is considerably less than 5000 barrels daily because most of the producers showing a high percentage of cut oil are off the active list. Frequent rains has made it possible to blend accumulated fluid with fresh water to such an extent that disposal is not a problem.

Anticipating an early arrival of salt water trouble in the field, the East Texas salt water disposal committee was created last June to function in preventing the pollution of fresh water streams cutting through the oil area. This committee has three field inspectors, including George E. Martin, chief inspector and a veteran in this line of endeavor, devoting their entire time on anti-pollution work. A checkup on all wells making cut oil is made at regular intervals to ascertain the rate of increase, if any, and to assist well owners in providing adequate facilities for trapping the fluid. However, these inspectors have occupied most of their time in following through on pipe line breaks and combatting waste oil problems around completed wells so as to protect streams from pollution. The usual run of property damage suits filed by land owners have been held to a minimum in the field because of these inspectors giving timely warnings to operators having poorly kept leases. State fish and game wardens are supporting the inspectors in this anti-pollution activity, and on several occasions have filed suits against careless property owners.

Disregard shown lately by independent operators in over-stepping the assumed deadline for oil production along the west and north flanks of the field has brought on a noticeable increase in the number of wells making salt water. Larger companies are reluctant to expend their operating funds and energy in trying to develop production on leases situated structurally low, and choose to farm out such tracts to small operators, who carry the former for an over-riding royalty, or assume an oil payment obligation. However, all of the larger companies have not been successful in determining the dead line on production expected to be free of water, and are now sharing in the field's water troubles.

In anticipation of salt water eventually rendering so-called edge leases on the west and north flanks unprofitable to operate, some of the operators are concentrating their development work on this class of properties in order to recover as much clean oil as possible. Their leases situated on higher structural positions will be less damaged by oil and gas drainage now taking place. Dissipation of the gas pressure on the field is expected to be followed by rapid advance of water, with possibilities that edge properties now yielding prolific wells that flow pipe line oil will be flooded too rapidly to justify the expense of installing pumping equipment.

Lack of continuity of the producing sand along some sections of the water approach has already displayed signs of offering more resistance to encroachment. Breaking up of the sand body into shales that help seal off the exposed layers of the oil and gas horizon have proven that a retarding influence will prevail against the normal water entrusion. Such a condition is believed to be partially responsible for water not having made greater progress in sweeping in from the west flank of the Gregg County portion of the field.

The Overton townsite area in Rusk County has been a heavy contributor of water wells lately because of small operators over-stepping the danger zone, while an increase in number of wells showing water has also been noted along the north end of the field, extending from Gladewater to the northwest as far as the Marshall Mann Survey. It is the opinion of some students on the water situation that the north end of the field will offer less resistance to the water advance because of the normal water shed of the Ozarka uplift to the north is directed towards the field. However, it remains to be determined if the Red River faults serve as a factor in diverting this huge water shed before it reaches the Sabine basin of Texas.

Any influence that the Ozarka uplift may have on the water situation in the East Texas field is still a matter of conjecture, but authorities have satisfied themselves conclusively that a water drive from the west is in store for

the field. Recent building up of reservoir pressure in wells adjacent to the water zone has been noted with interest, as such developments forecast the replacing of oil and gas withdrawn during the past year by a body of water that obtains its driving power from across the basin.

The East Mountain community on the north end of the field in Upshur County registered a few additional wells to the list of those making water. Humble Oil & Refining Company's C. T. Shelton 1, located in the southeast corner of 59-acre lease on the south line of the Wm. King Survey, is reported to be flowing only 15 barrels oil daily, with 20 per cent water showing. This well was completed late in November making 42 barrels oil per hour through three-quarter-inch choke on tubing at a sub-sea depth of 3319 feet. The same company's D. C. Shelton 1, located a short distance to the northwest on 19½-acre lease, is a recent completion, making about 30 barrels pipe line oil daily by heads at a sub-sea total depth of 3316 feet. California Petroleum Corporation of Venezuela's D. Culpepper 1, a northwest offset to the latter well, is reported to be showing about one per cent water and 4½ per cent b.s., having been completed late in November with the hole bottomed 3322 feet below sea level. The water situation in this area may have been aggravated somewhat by the accidental drilling of Trico Oil Company et al's East Mountain School 1 to a sub-sea depth of 3322 feet, with a trace of water still showing after plugging back 19 feet.

In the Overton area, Goodgame & Eby's W. W. Holland 1, located in the northwest corner of the J. Lindley Survey, flowed about 300 barrels oil during first 36 hours after completion from sand at 3829-3832 feet, then quit with a large quantity of water showing. In the W. G. Tutt Survey, it is reported that M. & G. Oil Company's Kee-Moore 1, located on a two-acre site, is cutting three per cent while making its 100-barrel daily proration allowance, while the same concern's Priddy 1, is cutting a like amount of fluid.

Walter H. Gant and Waggoner's Sebe Stone 1, a recent completion in the southwest corner of the D. W. Campbell Survey, Smith County, is reported to have made 96 barrels fluid during first 20-minute open casing flow, with five per cent water in evidence, then when chocked to 20 barrels per hour the percentage of cut oil was reduced about one-half. This well is producing from sand at 3855-61 feet. A new addition to the Smith County water list is that of J. E. Lucas and others' Negro Church 1, located in the extreme west edge of the Joiner field, with a sub-sea total depth of 3327 feet. The latter is reported to be showing about three per cent b.s. and water.

Plugging back efforts have been fairly successful as a relief measure on bottom hole water in the East Texas field, as eight of 15 wells that have been plugged back are credited with having excluded water. This high average is partially due to wells in the Kilgore area having plugged back when wide-open production last spring and summer caused water to work its way by channelling to structural high points. Pinching of these wells served the same purpose, but owners preferred to take no chances and cemented off a portion of the oil horizon as a precautionary step. Gradual reduction of proration allowances per well since

Water Wells East Texas Field

GREGG COUNTY

Owner—	Elev.	Producing Horizon	Total Depth	Sub-Sea Depth	Date Comp.	Remarks
F. A. Bates (Harper-Neff) et al's						
M. T. Cole 1.....	266	3558-3573	3603	3337	5-29-31	10% B.S. & W. after PB
Continental Oil Co.'s						
C. C. Crews 1.....	361	3687-3689	3689	3328	8-15-31	2 to 10% B.S.&W
C. C. Crews 4.....	337½	3666-3668½	3674½	3337½	11-13-31	none after PB
Flanagan Prod. Co.'s						was 23%
W. B. Walker 1..	272	3599-3504	3604	3332	10-18-31	90% B.S&W. & dead.
Iowa-Payne Oil Co.'s						
W. B. Walker 1..	380	3693-3702	3702	3322	6-17-31	25% B.S. & W.
Magnolia Pet. Co.'s						
M. T. Cole 1.....	262	3584-3586	3586	3324	6-28-31	20% B.S. & W.
Mazda Oil Corp.s						
M. M. Cotton 1...	328	3651-3670	3670	3342	5- 3-31	4% B.S. & W.
Selby O&G Co., & Lewis'						
A. Miller 2	278	3591-3602	3602	3324	1- 5-32	2% B.S.
Louis Sikes et al's						
F. E. Stancil 1....	406	3683-3718	3718	3312	9-28-31	Trace B.S. & W.
Sinclair O. & G. Co.'s						
M. T. Cole 1.....	332	3647-3660	3660	3328	4-26-31	1% B.S. & W.
M. T. Cole 5.....	262	3584-3586	3586	3324	6-30-31	12% B.S. & W.
Stanolind -Simms Oil Co.'s						
A. W. Miller 1	274	3585-3599	3609	3333	11-15-31	None after PB. Was 100%
Sun Oil Co.'s						
E. L. Walker 1....	390	3705-3718	3718	3328	8-21-31	80% B.S. & W.
The Texas Co.'s						
J. Waddell 1	336	3661-3684	3684	3348	12-14-31	5% B.S.&W.
Tidal Oil Co.'s						
J. E. Choice 1.....	380	3694-3702	3702	3322	6-20-31	5% B.S. & W.
Winston Oil Co.'s						
Paul Jones 2	368	-3660	3684	3316	10- 5-31	None after PB. Was 30%.
Wise-Jackson's						
W. Dickey 1	376	3692-3696	3696	3320	5-12-31	5% B.S. & W.

RUSK COUNTY

Bellinger (Droppleman Dev. Co.)'s						
T. C. Warren 1 ...	470	3755-3775	3775	3305	7-22-31	35% B.S. & W.
H. L. Blackstock et al's						
W. P. Brightwell 1	371	3672-3684	3684	3313	3-29-31	None
Brown-Wilson et al's						
M. R. Terrell 1.....	398	3712-3729	3729	3331	6-22-31	25% B.S. & W.
Burton Drl. Co. et al's						
E. B. S. Florey 1..	350	3720-3729	3729(?)	3379	3-15-31	50% B.S. & W.
Cameron Oil Co.'s						
S. P. Warren 1....	440	3762-3766	3766	3326	10- 6-31	6% B.S. & W.
Chas. Carroll et al's						
J. C. Gipson 1	474	3780-3802	3802	3328	12-17-31	20% B.S.&W. and dead.
E. L. Chapman et al's						
O. Russel 1	338	3665-3668½	3677	3339	6-23-31	6% B.S. & W. after PB
Crude Prod. Co.'s						
Joe Gipson 1	480	3803-3808	3808	3329	9-16-31	25% B.S. & W.
R. H. Dearing & Sons'						
T. H. Goforth 1...	484	3771-3787	3787	3303	6-15-31	4% B.S. & W.
East Texas Ref. Co.'s						
Dorcas Wills 1....	378	3688-3693	3693	3315	4-25-31	None
Dorcas Wills 5....	344	3672-3679	3692	3348	5-17-31	None after PB
Dorcas Wills 7....	362	3656-3671	3671	3309	5-29-31	None
H. W. Elliott et al's						
M. R. Terrel 1....	428	3752-3764	3764	3336	5- 9-31	Dead
Goodgame & Eby's						
W. W. Holland 1 ...		3829-3832	3832	....	1- 4-32	Dead & to PB acct. water.
Gulf Prod. Co.'s						
F. Birdsong 1	325	3557-3608	3661	3336	4- 8-31	None after PB
G. H. Morris 2....	340	3664-3666	3666	3326	1- 6-32	98% B.S. & W.
Geo. Guthrie et al's						
I. P. Perry 1.....	396	3700-3706	3706	3310	7-29-31	15% B.S. & W.

(*Continued on next page*)

September have likewise been a contributing factor towards the exclusion of bottom hole water.

Sinclair Oil & Gas Company recently partially retrieved an edge well, marking the west limits of production for the Joiner section in Smith County, by cementing off the Woodbine horizon, and re-drilling seven feet of the sand. This company's Amanda Wiley 1 was temporarily abandoned last April in sand at 3846-3894 feet because of showing little oil with a heavy flow of water. Having terminated its aggressive development program, a workover crew was assigned to this test late in December. The hole was bottomed at 3357 feet below sea level, and plugged back to a minus depth of 3316 feet. The well gauged 100 barrels fluid per hour, 36 per cent water, on open tubing test after redrilling, and the installation of a one-inch bottom hole choke lowered the fluid output to 30 barrels per hour, with 33 per cent b.s. and water in evidence.

Continental Oil Company's C. C. Crews 4, located in the Leonard Perkins Survey, Gregg County, and on the northwest flank of the Kilgore area, is an outstanding example of results obtained by plugging back. This well developed 23 per cent water shortly after its completion middle November from 8½ feet of sand, with the hole bottomed at a minus depth of 3674½ feet. No attempt was made to operate the well while showing such a high percentage of fluid, so the hole was filled up about 75 feet with cement under pressure. In drilling out cement plug on the first occasion the crew cored too near the water level, causing the volume of b.s. and water to increase to 65 per cent. T. W. Wilson, superintendent, decided to repeat the cementing process, then drill two feet less. This sacrifice of two feet of the oil sand has eliminated the water troubles of the well, or at least for the time being, and when allowed to flow 100 barrels oil per hour through tubing no water was reported late last week.

Sun Oil Company's E. L. Walker 1, located on the west flank of the Kilgore area, is one of the few pumping wells in the field that is also making a large volume of water. This well is lifting about 650 barrels of fluid in order to produce its 100-barrel daily proration allowance. It failed to flow upon completion.

Water Wells East Texas Field

RUSK COUNTY—(Continued)

Owner—	Elev.	Producing Horizon	Total Depth	Sub-Sea Depth	Date Comp.	Remarks
Humble O. & R. Co.'s						(Dead)
L. D. Crim 7	366	3630-3645	3682	3316	4- 2-31	None after PB
L. D. Crim 16....	338	3610-3642	3642	3304	4-20-31	None
Magnolia Pet. Co.'s						
E. F. Florey 1....	335	3641-3647	3661	3312	4-10-31	15% B.S. & W. after PB
C. L. McMahon et al's						
S. B. Wills 1.....	360	3657-3663	3663	3303	4-27-31	5% B.S. & W.
Murray & Goude's						
M. L. Priddy 1....	505	3817-3823	3823	3318	10- 3-31	2% B.S. & W.
Frank Russell et al's						
J. S. Powers 1	428	3757-3767	3767	3339	7-29-31	2% B.S. & W.
Shell Pet. Corp.'s						
Dorcas Wills 1....	349	3659-3661	3661	3312	4-21-31	4% B.S. & W.
Snowden & McSweeney Co.'s						
Roy Laird 1	380	3597-3679	3687	3307	4-14-31	None after PB
Stanolind O. & G. Co.'s						
R. Christian 1....	360	3670-3676	3676	3316	7-30-31	1% B.S. & W.
M. R. Terrell 1....	398	3703-3715	3715	3317	5-11-31	None
State Production Co., Inc.'s,						
J. C. Gipson 1	464	3789-3792	3792	3328	9-25-31	Lots water and dead.
Sun Oil Co.'s						
Ed. Barker 1.....	430	3746-3748	3748	3318	5- 9-31	5 to 25% B.S.&W
Turman Oil Co.'s W. P.						
Brightwell 1-A ...	367	3640-3663	3723	3356	4-26-31	None after PB. Was 40% W.
Upchurch & Allen's						
W. P. Brightwell 1.	340	3608-3677	3677	3337	3-29-31	None
W. P. Brightwell 2.	355	3614-3675	3675	3320	4-17-31	None

SMITH COUNTY

East Texas Ref. Co.'s						
Tyiska 1	523	3837-3845	3845	3322	5-19-31	15% B. S. & W.
J. E. Lucas et al's						
Negro Church 1...	474	3791-3801	3801	3327	12-19-31	3% B.S.&W.
Sinclair O. & G. Co.'s						
A. Wiley 1.....	537	3846-3853	3894	3357	5- 5-31	33% B.S.&W. after PB.
A. S. Jarvis 1-A...	389	3698-3699	3710	3321	4-28-31	1% B.S. & W. after PB
Mayfield 1-A	540	3843-3851	3851	3311	5-16-31	None
Sun Oil Co.'s						
R. L. Henson 1...	401	3702½-3714	3714	3313	7-19-31	.6% B.S. & W.
Walter H. Gant & Waggoner's						
Sebe Stone 1		3855-3861	3861	....	1- 8-32	2% B.S.&W.

UPSHUR COUNTY

Alma Pet. Corp.'s						
J. W. L. Younse 1.	349	3630-3668	3668	3319	8-23-31	4% B.S. & W. by heads
California Pet. Corp.'s						
D. Culpepper 1 ...	439	3742-3761	3761	3322	11-28-31	4½% B.S.& 8% Water.
J. W. Clark (Pelican) et al's						
E. H. Hamilton 1	434	3756-3762	3762	3328	7-30-31	5% B.S.&W.
Humble O&R Co.'s						
C. T. Shelton 1 ..	420	3715-3739	3739	3319	11-30-31	20% B.S.&W.
Jay-Kay Oil Co.'s						
Victory 1	375	3679-3686	3686	3311	10-25-31	4% B.S. & W. by heads
J. A. Johnson et al's						
John Hargraves 1.	406	3709-3712	3712	3306	10-30-31	6% B.S. & W. by heads
Shano Oil Co.'s						
Doby-Rodden 1 ..	543	3774-3784	3784	3241	12-22-31	No report
M. Taxman et al's						
A. Callahan 1.....	408	3704-3719	3724	3316	7- 4-31	40% B.S. & W. after PB & SD
Trico Oil Co. et al's						
School Lot 1.....	444	3736-3747	3766	3322	12-16-31	Trace water after PB
Ty-Tex Oil & Dev. Co. et al's						
S. F. Kay 1.....	316	3648-3669	3669	3353	11-10-31	70% B.S. & W. on P. now SD
R. M. Weaver Est. et al's						
L. J. Everett 1....	296	3612-3617	3617	3321	6-27-31	50% B.S. & W.

Calgary, Alta.—Annual meeting of Alberta Oil & Gas Association will be held sometime the latter part of next month. This decision was reached at a recent meeting of the board of directors of the association. A nominating committee has been appointed to present names for officers of the association for the next year. The directors of the association also approved changes in the new provincial oil regulation for Alberta.

San Antonio, Texas.—An increase in activity in the Cole-Bruni field, Duval and Webb Counties, is evidenced. One producer and two active operations were reported during the week. Cole Petroleum Company's Benavides 74, Survey 19, Duval County, is making 75 barrels of oil from 1720-28 feet. French Oil Corporation's Benavides 5-A, Survey 659, Webb County, is drilling at 100 feet, while the Magnolia Petroleum Company's Benavides 6, Survey 660, same county, is rigging up.

South Texas Field Developments

EARL POST, ***Staff Representative, San Antonio, Texas***

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Damac Sector of Pettus Field Most Promising in South Texas

San Antonio, Texas.—The Damac sector of the Pettus field, Bee County, bids well to be one of the most prolific producing areas of the Texas Gulf Coast. The structure to the west is yielding some rather prolific wells.

Buck Oil Corporation's (Buchanan and Lefevre) George Ray 2, John A. Williamson Survey, west offset to Ray 1 and south offset to The Texas Company's Gremmel 1, is flowing at the rate of 750 barrels through one-fourth-inch chokes from 3904-13 feet. It is showing a tendency to increase. The Texas Company well came in for this initial, but increased, as did the Ray 1, discovery well of the west extension.

The Texas Company is preparing to drill its Gremmels 2, 3, 4 and 5, each offsetting the other to the west, across the southern portion of its lease, John Pace Survey. The first two are now rigging up and the other two likely will start upon the completion of the present ones. The Gremmel 2 calls for an offset by Buck, while the Gremmel 3 is now being offset by McMurray et al's Ray 1 (formerly Weinert et al), which has set 240 feet of surface casing, and is drilling ahead at 1500 feet.

Slick-Seeligson, Inc.'s George A. Ray 3, east offset to The Texas Company producer, and in the Kerr Survey, cored the sand at 3884-90 feet and took a six-minute drill stem test, showing 120 pounds pressure and 425 feet of oil on one-fourth-inch choke. Casing is now being set and an early completion is expected.

In the eastern portion of this pool, Houston Oil Company is drilling below 3800 feet in Portis 3, A. Smalley Survey. This well is an east offset to Portis 2, a producer.

Cabeza Creek Area, Goliad County, Has Third Successive Failure

San Antonio, Texas.—John F. Camp and Stanolind Oil & Gas Company have recorded their third successive failure to establish deep production in the Cabeza Creek area of Goliad County. Their Pettus 3, 2438 feet north and 74 degrees east of Pettus 2, showed for no production in a sand cored at 4284-91 feet. At this level, Pettus 1 made a small producer, which was finally abandoned on account of salt water. The Pettus 3 had a presence of salt water odor and a slight bit of oil and gas, but no drill stem test was attempted. It is now shut down at 4464 feet for fuel oil. It will be drilled deeper.

Zapata County Continues to Lead All South Texas in Well Completions

San Antonio, Texas.—As usual, Zapata County led all South Texas in completions as well as new operations during the week. Six completions, all producers, were recorded during the period. All of them are in the Escobas field, where a new sand recently was discovered.

O. W. Killam takes the lead as the most active operator in the field, recording three producers during the week, two from the 1450-foot pay and another from the 1300-foot level. His Bustamante 13 is making 150 barrels from 1454-64 feet, while his Medina (S. Bustamante) 2, is making the same amount of oil from 1460-70 feet. Medina 2 is being rigged up. His Bustamante 17 showed salt water and oil originally at 1305-10 feet, but was completed for 10 barrels initial and Bustamante 1 is rigging up.

In the south end of the field, Pray and Chamberlain Production Company's M. Garza Estate 1-C(4) is good for 30 barrels from 1342-48 feet.

Winch and Billings completed their Jose Bustamante 7 for an initial production of 150 barrels from 1461-69 feet and are moving onto Bustamante 1 to deepen it from 1326 feet, where it is now producing.

Interest Increasing in Test In Southwestern Kerr County

San Antonio, Texas.—That the showing encountered in Evans and Gant and Eastland Oil Company's Jeff Love 2, Southwestern Kerr County, is in the Ellenberger lime, rather than the Mississippian series, increases interest in that area. The 5 3/16-inch casing is being run into the hole to the top of the sand encountered at 5835-39 feet, preparatory to completion.

The showing in this well was encountered on January 7 and the 6⅝-inch hole filled 700 feet in oil, testing 31.5 gravity, corrected, in five hours. The bailer was run several times and the flow of oil showed an increase. It is now standing 5400 feet in oil; bailing has not materially lowered it.

The casing was about 40 feet off bottom January 17, being held up at this level on account of cavings. It was likely, however, that the job of setting the casing had been completed later in the week.

Exact location of the well is 150 feet from the south and west lines of Section 1592, one-half mile southeast of the same operator's Jeff Love 1, the discovery well of the district. This is the southern portion of the Edwards Plateau in what is known as the hill country of South Texas. It is 45 miles southwest of Kerrville.

It is said that between 50 and 100 barrels of oil had been bailed out of the hole January 17 despite obstructions in the well. The 6⅝-inch casing is set to 3260 feet, leaving 2579 feet of open hole.

The well topped the Mississippian series of sediments of the Paleozoic area at 5540 feet and supposedly went out of it just above the level in which the production was found. The fact that this is the Ellenberger, as many geologists declare the formation to be, indicated that the Hill district might be a prolific producer. Most observers of the well state that the crude gives promise of having a valuable lubricating oil content, possibly similar to the premium grade of oil (for lubricating purposes) now being produced from the lower section of the 8500-8900-foot pay in the Big Lake field, Reagan County, West Texas, which was largely the incentive for making an effort for production in the lime in Kerr County.

The one obstacle in drilling wells in this territory might come in the cost. In the Chittim field of north central Maverick County, Texas Gas Utilities Company's wells are sunk to about the same level as the Kerr test, for a contract price of around $80,000.

Gulf Coast Field Developments

JACK LOGAN, ***Staff Representative, Houston, Texas***

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Three Commercial Producers Recorded for East Hackberry

Houston.—All three completions listed for East Hackberry field in Cameron Parish, Louisiana, during the past week were commercial producers; they had an aggregate initial production of 2780 barrels.

The best well of the three was Calcasieu Oil Company's Watkins 32 in Section 13-12s-10w, which was completed at 2985 feet for an initial production estimated at 2100 barrels of 25.5 corrected gravity oil. The oil, which flowed through a three-quarter-inch choke, had a temperature of 82 degrees. Pressure on Watkins 32 was gauged at 800 pounds. Completion detail shows 6⅝-inch casing set at 2960 feet and one joint of 4½-inch screen in the oil sand.

Yount-Lee Oil Company's State 48 was brought in for an initial of 400 barrels at about 3045 feet, while Jim Oil Company's H. P. Erwin 5, located in the same section, township and range as Watkins 32, referred to above, was completed at 3025 feet for an initial production of 280 barrels of 25.5 corrected gravity oil. A three-quarter-inch choke is on the well; temperature of the oil is 81 degrees, and one joint of screen is in the sand, just below the 6⅝-inch casing that was set at 3000 feet.

Calcasieu Oil Company was not so successful with its Watkins 31 during the week. Screen was set at 3065 feet and the well bailed. Seventy more feet have been drilled in Watkins 31, and it has swabbed salt water and a little oil, but will not be abandoned until further attempts to make it produce have been made.

The Texas Company has spudded State 8 at East Hackberry and should be setting the first string of casing in about a week. State 8 is located in Section 13-12s-9w.

Lockport Workover Well Makes Good Gas Producer

Houston. — Vacuum Oil Company and Gulf Refining Company's Farquhar 8 in Lockport field of Calcasieu Parish, Louisiana, was successfully worked over during the past week to make a 4,000,000 foot gas well at 5632 feet. One joint of screen was set in the sand at 5618-32 feet. The production is coming out through two, three-sixteenths-inch chokes and the well has a pressure of 2400 pounds.

In the Edgerly field of South Louisiana, Moore and Emerson abandoned their Hunter 1 in hard lime at 4282 feet.

Three Wells at Barbers Hill Increase Production 800 Barrels

Houston. — Barbers Hill daily average production was boosted 800 barrels during the week ending January 16 by completion of three wells, flush oil of which brought the field's average up to 18,800 barrels.

Mills Bennett's J. F. Wilburn 6, on the east flank of the dome in Strip 5 of the Hy Griffith Survey, was swabbed in and flowed 1900 barrels initial from a total depth of 5035 feet. The oil is coming through a half-inch choke carrying a pressure of 440 pounds. Five-inch o.d. screen, 180 feet of it, was set in the producing formation, which is yielding 27.5 gravity oil with a temperature of 89 degrees.

Another completion was Sun Oil Company's J. Wilburn 12, which produced 1200 barrels of 23.6 gravity pipe line oil from 4470 feet. Forty-five feet of five-inch o.d. screen was set. The oil has a temperature of 76 degrees and is coming through one-half-inch choke. Pressure on the choke is 220 pounds.

Sun Oil Company also completed during the week a well on its Winfree lease. O. K. Winfree 2, a workover on the west side of the field, yielded 480 barrels of pipe line oil when drilled through the salt to a total depth of 5635 feet. Forty-six feet of 3½-inch screen was set in Winfree 2, which is producing through one-half-inch choke. Pressure on the well is 590 pounds.

Texas Gulf Producing Company's (formerly Nat Hunter Producing Company's) J. M. Fitzgerald 1 at Barbers Hill is due for completion soon, having entered an oil sand at 5209 feet and cored same down to 5247 feet.

Sinclair Oil & Gas Company's J. F. Wilburn 10, which encountered an oil show at 4412 feet, tested salt water and will be deepened.

Activity Is On Upgrade In Pierce Junction Field

Houston.—With one completion listed for the week and several wells nearing the producing horizon, field activity at Pierce Junction field, Harris County, is on the upgrade, compared to what it was during 1931.

Gulf Production Company completed Taylor 34 at Pierce Junction during the week for an initial production of 800 barrels of pipe line oil which tested 24 gravity at 72 degrees. Seven-inch casing was set on top of the oil sand at 2979 feet, while screen extended from that depth to about 4000 feet. The oil is flowing through a three-eighths-inch choke, and pressure on same is 400 pounds.

Taylor 34 is located 141 feet south of the northwest corner of the J. Hamilton Howe 130-acre tract and 430 feet west and at right angles, or 350 feet west of Taylor 22, J. Hamilton Howe Survey.

Humble Oil & Refining Company's C. J. Hooks 1 at Pierce Junction is drilling near 3900 feet in shale, while Rio Bravo Oil Company's Settegast 10-A, a workover, is fishing for screen at 4508 feet. Southern Petroleum Company, drilling Gulf Production Company Fee 1, a workover also, on the northwest flank of the field, is milling out at about 3590 feet. Original total depth of this well was 3845 feet.

Houston.—The Texas Company abandoned two wells in proven fields of the Texas Gulf Coast this week. Cave Heirs 1 at Damon Mound was abandoned in heaving shale at 3647 feet; it was located 75 feet southwest and 150 feet southeast at right angles from the north corner of Block 73, Lot A, Wilson Subdivision of the A. Darst Survey. The second abandonment was Stevenson Fee 46 at Humble. Progress on this well was halted at 5126 feet by heaving shale.

Louisiana--Arkansas Field Notes

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Southeast Zwolle Production Extended Three-Fourths Mile

Shreveport.—Lyons and Neely's Clanan 1, SE NW Section 14-7-11, Sabine Parish, was successfully completed as a commercial oil well last week, extending southeast Zwolle production three-fourths of a mile south. This well which a fortnight ago made two heads of oil and then went dead, was brought in flowing 65 barrels of oil daily through two-inch tubing, at total depth of 2539 feet in Zwolle marl; six-inch casing was cemented at 2402 feet.

Two wells west of production in Section 1-7-13, a mile southwest of Zwolle townsite production, where eight of nine tests drilled were producers, were failures last week. W. F. Lacey's Parie 1, SW SE Section 2-7-13, was abandoned as a salt water hole at total depth of 2575 feet; Smitherman and Grigsby's Martinez 1, NW SE Section 2-7-13, was abandoned as a dry hole at 2520 feet in chalk.

Five miles north of Zwolle east field production, Gerhig Company abandoned W. F. Skinner 1, NW NW Section 16-8-11, as a dry hole at 2862 feet below chalk whose base was reached at 2780 feet; elevation was 290 feet. The test had a gas show near top of the chalk at 2302 feet but bailed dry. Marl was logged at 2230 feet where six-inch casing was set.

Other edge wells and outside tests in Zwolle completed last week were: Ohio Oil Company's Bowman-Hicks 13, NE SE Section 35-8-12, pumping 25 barrels of oil daily, total depth 2514 feet in chalk; Crescent Drilling Company's McCormick 1, NE SE Section 2-7-11, dry, abandoned at 2545 feet in chalk; and M. J. Kissick's Brown 1, NE NE Section 1-7-11, dry and abandoned at depth of 2720 feet.

Five new locations, four outside tests in the southeast part of the field, were made in Zwolle last week. They are: Service Drilling Company's Gardner B-1, SW SW Section 7-7-10, rig; J. E. Smitherman's Smith 1, SW NW Section 7-7-10, location; Baird and Stone's McNeely 1, Section 14-7-11, derrick; and Eddie Self's Jacobs 3, SE SE Section 1-7-11, derrick.

Another Gas Producer in Bellevue Structure Assured

Shreveport.—H. I. Morgan and associates, who have secured several commercial gassers in the 1700-1800-foot level of the upper Trinity on the southwest flank of the Bellevue structure, the highest geological point on the Sabine Uplift, appear to have assurance of another gas producer in that zone. Last week their Smith 1, Section 22-19-11, Bossier Parish, tested an estimated 25 million cubic feet of gas in a drill stem test from 1758 to 1770 feet; six-inch casing was cemented at 1758 feet; total depth is 1770 feet.

Plain Dealing Oil & Gas Company is standardizing Nattin 1, Section 15-22-14, a Bossier Parish wildcat, in which formation was recently shot and 150 feet of oil rose in the hole; total depth is 2890 feet.

An outside test in Red River Parish was standardized last week pumping 10 barrels of oil daily from total depth of 2750 feet. This is Mack Jourdan Company's Lockett 1, Section 32-13-10; six-inch casing was set at 2350 feet.

Two North Louisiana wildcat tests were abandoned as failures last week. D. L. Perkins and associates' Ardis 1, NW SW Section 13-15-11, Bossier Parish, was a salt water hole in the Nacatosh at total depth of 1004 feet; Nacatosh was logged at 944 feet.

Illini Production Company's Brown 1, NE SE Section 34-11-10, Natchitoches Parish, which had a good gas show at top of the Ozan at 1958 feet, after logging base of chalk at 1957 feet, was abandoned as a dry hole at total depth of 2590 feet.

Besides five locations in Zwolle there were two other locations announced last week in North Louisiana: J. J. Potts, Trustee's Robertson-Reed 1, NE SW Section 11-18-4e, Ouachita Parish; and United Gas Public Service Company's Alice Purvis 1, Section 34-17-6e, Richland Parish, a derrick.

Smackover High Water Affects 225 Wells in Producing Area

Shreveport.—For the second time within a space of three weeks high water from Smackover Creek overflowed a large number of producing wells in the Smackover, Arkansas, field last week. Approximately 225 wells are affected, about 100 of which had not been reopened following their overflow in the preceding high water a fortnight before, when 315 wells had been shut down.

Among the wells again closed down by high water is Lion Oil Refining Company and associates' Guy P. Hayes A-9, NE NE Section 4-16-15, Union County, Smackover's first deep test and the deepest hole ever drilled in North Louisiana or Arkansas. This test was shut down again at total depth of 7255 feet in salt.

Arkansas had no new locations during the last week.

Two Interesting Wildcat Tests In Mississippi Are Abandoned

Jackson, Miss.—Gulf Refining Company has abandoned two interesting wildcats in Mississippi, one in the Quitman district of Clarke County in east central Mississippi and the other south of the Jackson gas field in Hinds County.

The former test is Long-Bell Lumber Company A-1, SW SW Section 10-2n-16e, Clarke County, which was junked and abandoned in red shale of the Tuscaloosa red beds at total depth of 4775 feet, which formation was logged at 4115 feet; elevation was 380.3 feet. Black shale was topped at 2290 feet, chalk at 2633 feet and top of the Eutaw at 3673 feet. The well was junked on account of a parted three-inch drill stem which the crew failed to recover. The best oil show ever secured in Mississippi was obtained in the Tombigbee series in the Eutaw from 3692-3700 feet when a sand core with a saturation of heavy oil of 16.5 gravity was recovered. Seven-inch O.D. casing was cemented at 3685 feet and the well tested heavy oil and salt water. It was then decided to take the test to the 4400-4500-foot level where a sand in the Tuscaloosa in a well six miles away had been found but which carried salt water. This sand showed only traces of oil in Long-Bell A-1 and it had been decided to go to 5100 feet when the drill stem was hung for the second time.

Flying Equipment and Operations in Aerial Photography

(*Continued from page 28*)

prints," which are photographic reproductions of the master mosaic on prints usually 22 inches by 24 inches in size. Those prints or photographs may be fitted and cemented upon a stiff paper or pasteboard base to form one large, continuous map, in which form they are commonly delivered to the clients. The method of mounting the map is sometimes varied, however, to permit its being folded for use in field work or so that it may be carried around conveniently, the prints being mounted on linen sufficiently far apart to allow for the folds between them.

While the reproductions of the mosaic are made generally into copy prints 22 inches by 24 inches in size (plane table sheet form), those prints may represent either enlargements or reductions or duplications of the original mosaic. An original mosaic with size of 29 inches by 26 inches and upon a scale of 1500 feet to the inch would be rephotographed commonly in the oil industry upon a scale of 1000 feet to the inch, or with a 50 per cent enlargement; and with that degree of enlargement the whole mosaic would be conveniently reproduced on four of the 22-inch by 24-inch copy prints. If the original mosaic instead of being enlarged, however, is reduced to a scale of 2000 feet to the inch, it may be fully reproduced on one instead of four of the copy prints. For most purposes in the oil business, including much of the engineering work, the scale of 1000 feet to the inch is in greatest use, although there is considerable demand also for maps on the scale of 2000 feet to the inch, the smaller scale being desired in some geological work or for other special purposes.

The photographs which form the final maps to be used by the client are made ordinarily with a dull or semi-gloss surface so that lines or other data may be drawn on them with pencil or ink, or if preferable, the pictures may be made with a glossy surface to show sharp detail.

Use of Stereoscope

Important aid in studying the aerial photographic map is afforded by the stereoscope, under which are placed individual prints of the pictures which have gone into the making of the mosaic. The stereoscope is an instrument embodying a simple system of mirrors, and it causes the ground shown in aerial photographs to show up in third dimension, or in relief.

Two adjacent and overlapping aerial photographs, each including a given portion of ground, but each showing that same ground as photographed from a different angle, are placed under the stereoscope, and they are adjusted to suit the eyes of the observer and to such position that the common area shown on both pictures is in the correct place under the stereoscope. When that proper adjustment has been made the features of the ground loom up in bold relief and naturalness. Hills, trees, and houses appear to project upward prominently, and valleys, ravines, precipices and even the smaller gullies seem on the picture to be carved into the surface of the earth as they really are. The perception of relief is afforded through the mirrors, which transform the interval between the observer's eyes from a few inches to several thousand feet, resulting in a given object being seen simultaneously from the two different angles from which the two pictures were taken. It is not possible, consequently, to obtain the effect of relief by placing the stereoscope over an assembled photographic map, or by placing under the instrument two prints made from the same negative.

Through the use of the stereoscope many objects or features may be recognized which could not otherwise be identified. The instrument will establish, for instance, the true identity of a hill, a valley, an embankment, a stone wall, or some other object or feature, any one of which may show up on the aerial picture as a meaningless dark spot or black line. Differences of elevations and vertical distances may be estimated closely enough for practical purposes through comparison with the known horizontal scale.

This is the second of a series of articles by Mr. Logan. The Third, which will appear in an early issue, will deal with the making of ownership maps through aerial survey. Actual results are interestingly shown by a series of maps reproduced with the article. First is a typical map of an area near Luling, Texas, as shown by field notes. Next is a photograph of the area made from the air, in which the river is prominent. Finnally is shown the results of fitting the surveyor's map and the air map together.

Institute Will Hold Mid-Year Meetings at Tulsa, June 1, 2, 3

New York.—The American Petroleum Institute's Divisions of Production, Refining and Marketing will hold their regular annual mid-year meetings simultaneously this year on June 1, 2 and 3 in the Mayo Hotel at Tulsa.

Ordinarily the divisions meet on different dates and in different cities, but it was decided in the interests of economy and convenience this year to consolidate the gatherings, thus enabling members enrolled in all divisions to attend with the minimum of time, travel and expense. The board of directors will be in session, the first day will be given over to committee meetings and generally the affair will be conducted along the lines of the Institute's annual meeting, but with emphasis placed upon the technical work of the three divisions.

The tentative program calls for a general open session for discussion of pertinent problems of the industry and for general sessions of each division in addition to the regular divisional sessions at which technical papers will be presented and divisional routine business consummated.

While the technical phases of the petroleum industry's work will be emphasized, the affair in effect will be a miniature annual meeting of the Institute and will permit the membership to give consideration to questions that otherwise would be delayed until the thirteenth annual meeting at Houston next November 15, 16 and 17. Last year the Division of Production met at Dallas, the Division of Refining at St. Louis, and the Division of Marketing at Chicago.

Divisional chairmen, who are also Institute vice presidents, and who will preside at the sessions are:

Division of Production, Charles F. Roeser, Roeser & Pendleton, Inc., Fort Worth; Division of Refining, Daniel J. Moran, Continental Oil Company, Ponca City; and Division of Marketing, W. T. Holliday, Standard Oil Company of Ohio, Cleveland, Ohio.

Dallas, Texas.—The executive committee of the Mid-Continent Oil & Gas Association, Texas division, recently adopted a resolution in opposition to any federal tax on gasoline, reliably reported to be under consideration during the present session of congress. The resolution also provides that copies thereof shall be furnished senators and congressmen of Texas as well as the citizenship of the state, and the press.

Completions for Past Week in U. S. Fields

▼ ▼ ▼

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
JOINER AREA—		
Arkansas Fuel Oil Co., E. M. Beall (51-ac) 5	8000	3717
Wheelis (81-ac) 5	7000	3702
Big Indian Oil Synd., Wolford 1	8800	3737
Blackwell Oil & Gas Co., Samp Stone (53-ac) 4	8600	3662
R. I. Carter & Jas. Owens, Wolford (6-ac) 1	9000	3770
F. C. Clark et al, L. Johnson (3-ac) 1	10,000	3786
Deep Rock-Amerada Pet. Corp., J. T. Stovall (193-ac) 4	6500	3666
Devonian Oil Co.-Barnsdall Oil Co., W. O. Alford (99-ac) 5	9000	3815
Falcon Co., T. O. Mason (148-ac) 7	3500	3678
Walter H. Gant & Waggoner, Sebe Stone 1	7000	3861
Golding-Murchison Oil Co., M. L. Thompson (50-ac) 4	7000	3745
Hart Pet. Co., J. R. Alford 1	8000	3646
Humble O&R Co., J. H. Arnold (62½-ac) 3	8200	3800
J. R. Box (125-ac) 4	10,000	3773
Ida Holt (99-ac) 2-C	8500	3765
J. R. Lindsey (45-ac) 2	8000	3791
W. A. Mullikin (166.4-ac) 11	9000	3747
W. L. Price (206-ac) 7	10,000	3740
J. H. Silvey 1-B	10,500	3690
Magnolia Pet. Co., J. R. Wright 14	11,000	3720
Mid-Kansas O&G Co., H. L. Griffin (64-ac) 1	1000	3715
E. E. Moores (182-ac) 8	8200	3650
H. S. Moss & Pete Urschell, A. J. Deason (50-ac) 2	2500	3728
O'Donnell et al, London School 1	11,000	3786
R. M. V. Oil Co., L. J. Pinkston (75-ac) 1	10,000	3629
Standard Pipe & Supply Co., W. P. Brett (48-ac) 2	2500	3757
Tidal Oil Co., L. J. Pinkston 5	4000	3725
Ward Oil Corp. et al, Giles (41.7-ac) 4	6000	3715
KILGORE AREA—		
W. J. Collins et al, H. T. Elder (3.85-ac) 1	50	3615
D. D. D. Oil Co. (Fred Hethering-ton), E. S. Hagler (3-ac) 1	9500	3615
Dearing & Wallace, Wallace 1	7000	3565
Jackson-Wise & Markham, C. O. Christian (16-ac) 2	7500	3726
Magnolia Pet. Co., L. A. Griffin (44.6-ac) 8	10,000	3604
W. M. Jernigan (110-ac) 2	13,000	3709
John Radford (252-ac) 1	9500	3707
John Radford (252-ac) 2	9600	3673
M. C. O'Connell et al, Bean-Wil-loughby 1	9500	3599
Oriental Oil Co., Alexander-John-son (14½-ac) 2	5000	3562
Pelican Nat'l Gas Co., A. Spear-Laird (92-ac) 3	8000	3643
Shell Pet. Corp., J. H. Spivey (88-ac) 5	12,000	3758
Sun Oil Co., M. T. Cole (257-ac) 3	9000	3541
Weaver-Crim Corp., J. N. Peterson (23-ac) 1	7000	3677
Wells & Gann Drlg. Co., M. Charles (7½-ac) 1	9600	3663
LONGVIEW AREA—		
Adams & Lyles, T. Anderson (62-ac) 3-B	10,000	3493
Arkansas Fuel Oil Co., G. A. Castle-berry (52-ac) 2	*	3694
F. T. Rembert (86-ac) 3	9000	3484
S. G. Smith (60-ac) 1	15,000	3543
Atlantic Oil Prod. Co., W. T. Burn-sides (230-ac) 2-B	6500	3505
M. Fisher (65-ac) 3	8000	3514
W. H. Moyers (128-ac) 7	3000	3596
Bond & Johnson, J. R. Fenton (20-ac) 2	8000	3627
A. P. Carr et al, G. W. Richey (10-ac) 1	7000	3538
Champlin & Bass, Inc., A. L. Rogers 1	10,000	3660

For Tabulation and Comparison
See Market Section

Company, Well and Location	Initial Production Bbls.	Depth
Cox & Jake Hamon, Jr., L. A. Rodden (110-ac) 7	8000	3579
L. A. Rodden (110-ac) 9	8000	3628
Danciger O&R Co., C. O. Clemons (28½-ac) 3	11,000	3645
Dyck Oil Co., J. M. Christian (37-ac) 2	10,500	3570
F-H-E Oil Co., B. C. Christian (87-ac) 5	9500	3680
Gregg Oil Co., T&P Ry. Fee 1-D	8800	3562
Grisham-Hunter Corp., Fee (Blk 34) 1-B	7000	3596
Gulf Prod. Co., S. C. Fishburn (200-ac) 4	10,000	3535
Humble O&R Co., T. B. Harris (175-ac) 4	12,000	3533
G. W. Johnson (100-ac) 5	10,000	3695
J. M. McFarland (57½-ac) 2	9600	3657
D. C. Shelton (19½-ac) 1	100	3742
Magnolia Pet. Co., Mattie Dyer (40-ac) 3	12,000	3568
H. Fenton (50-ac) 2	8500	3744
J. W. Free 15	8000	3680
T. B. Stinchcomb-Todd (111-ac) 1	11,000	3605
T. B. Stinchcomb-Todd (111-ac) 3	12,000	3575
E. J. Moran et al, C. J. Dollahite (10-ac) 1	9000	3695
Petyon & Peyton, J. M. Christian (17-ac) 1	11,000	3601
Prairie O&G Co., Aiken (100-ac) 2	7500	3585
Red Star Oil Co., W. D. Christian (22.3-ac) 1	8500	3626
Sabinas Oil Corp., T. M. Collins (119-ac) 7-C	9000	3701
Selby O&G Co.-Lewis Prod. Co., A. Miller (85-ac) 1	2000	3602
Shano Oil Co., S. D. Rodden (43-ac) 1	8500	3784
Shell Pet. Corp., A. N. & V. King (160-ac) 2	8800	3615
C. C. Landers (107-ac) 8	8500	3737
C. C. Landers (107-ac) 9	5000	3687
Sinclair O&G Co., J. R. Williams (82-ac) 5	9600	3544
Stanolind O&G Co.-Simms Oil Co., Flewellen 3-B	10,000	3776
Sun Oil Co., John Hargraves (200-ac) 2	1500	3702
McKinley (80-ac) 4	7500	3665
Superior Oil Co., L. C. Ingram (160-ac) 6	12,000	3568
The Texas Co., J. Waddle (27-ac) 2	8500	3673
Tidal Oil Co., A. F. Sheppard (114-ac) 4	10,000	3690
Fox Wood et al, E. L. Walker (Blk 1) 1	12,000	3600
Yount-Lee Oil Co., E. M. Whatley (39.79-ac) 1-B	7000	3506
VAN AREA—		
Humble O&R Co., Mrs. E. E. Carroll (98.8-ac) 4	9500	2863

SOUTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BASTROP COUNTY—		
Marts & Beavens' Wm. Bahm 1	*	1683
BEE COUNTY—		
Buck Oil Corp.'s George Ray 2	750	3913
DUVAL COUNTY—		
Cole Pet. Co.'s Benavides 74	75	1728
LA SALLE COUNTY—		
Salt Lake City Oil Co.'s Mayes 1	*	1100
LIVE OAK COUNTY—		
Phillips Pet. Co.'s Sanger 1	*	4007
NUECES COUNTY—		
Houston Oil Co.'s Harrell 1-A	200	4560
SAN PATRICIO COUNTY—		
Saxet Oil Co.'s Rachel 18	20	4433
STARR COUNTY—		
Los Olmos O&G Co.'s Kelsey Bass 9	100	510
WEBB COUNTY—		
Usher Carson's Webster 4-D	25	3052
ZAPATA COUNTY—		
O. W. Killam's Cuellar 47	*	2430
Bustamante 13	150	1464
Bustamante 17	10	1310
Medina 2	150	1470
Pray & Chamberlain's Garza 1-C (4)	30	1348
Winch & Billings' Bustamante 7	150	1469

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BARBERS HILL—		
Sun Oil Co., J. Wilburn 12	1200	4470
Winfree 2 (wo)	480	5635
Mills Bennett, J. F. Wilburn 6	1920	5034
BLUE RIDGE—		
Teleschaw & Cady, Blakeley 1	25	2640
DAMON MOUND—		
The Texas Co., Cave Heirs 1	*	3645
HUMBLE—		
The Texas Co., Stevenson Fee 46	*	5125
BIG CREEK—		
Gulf Production Co., Davis 62	*	4424
HUMBLE—		
J. H. Burt, C. O. & G. Texas Co., Fee 1	78	1978
PIERCE JUNCTION—		
Gulf Prod. Co., Taylor 34	800	4000
JEFFERSON COUNTY—		
Texas Gulf Sulphur Co., Junker 1	*	1390

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
Carter Oil Co., Taylor 2, nw c, 19-1s-2w	1020	1840
CREEK COUNTY—		
Gled Oil Co., Hollingsworth 2, sw se se 20-19-9e	125	2125
Magnolia Pet. Co., Boone 5, cel sw se 34-17-7e	*	3102
J. H. Wright Estate, Maloney 1, sw c se 19-17-11e	*	2895
The Texas Co., Jones 2, cnl se ne 9-16-11e	*	2721
S. W. Anthony, Whitstone 1, "C," c sw se 3-16-12e	*	765
OKFUSKEE COUNTY—		
Wells et a, Stevenson 1, nw ne se 14-10-11e	¶10	1995
W. A. Fleming et al, Johnson 2, csl se se 2-10-11e	15	1649
OKLAHOMA COUNTY—		
Wilcox and Marshall, Buxton 1, csl sw ne nw 2-11-3w	22,315	6168
Continental et al, Shields 1, ne se sw 15-11-3w	4500	6475
Phillips Pet. Co. et al, Egermier 2, cwl nw sw sw 23-11-3w	1055	5428
OKMULGEE COUNTY—		
Clark et al, Hope 1, nw c sw se 26-12-12e	¶3	2313
SEMINOLE COUNTY—		
Holmes and Jarvis, Fish 1, ne nw ne 30-7-8e	4450	2984
WAGONER COUNTY—		
C. A. Mechlin et al, Drew 5, c nw sw 30-18-15e	*	1306

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
CLAY COUNTY—		
Crystal Oil Co., Fleuier 1, sw c 19-8-3e	*	2860
COWLEY COUNTY—		
Slocum et al, State Bank 1, se sw sw 16-35-4e	*	1952
ELLSWORTH COUNTY—		
Barnsdall Oil Co. et al, Schact 1, se nw sw 25-16-10w	*	3386
GREENWOOD COUNTY—		
Gore and Phillips, Beal 9, nw se ne 28-23-11e	699	1960
McPHERSON COUNTY—		
Rosenthal et al, Dielman 1, ne se sw 35-19-2w	1495	2932
Wolfe Creek Oil and Sinclair, Dunsford 1 (owd), se c sw 23-19-2w	90	2943
Mid-Kansas O&G, Whitwright 2, c sw sw 30-19-1w	¶5½	2911
The Texas Co., Munn 1 (owd), nw c ne 12-20-2w	*	3427
RUSH COUNTY—		
Mid-Kansas O&G, Mohr 1, c nw 14-18-16w	¶27½	3488
SEDGWICK COUNTY—		
Roy Ramsey et al, Davies 2, sw c 17-27-2e	300	3228
Derby Oil, Eastborough 4, cel ne nw ne 19-27-2e	900	3269
Derby Oil, Eastborough "B" 5, cel ne sw ne 19-27-2e	900	3267

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
J. W. Kaufman Estate, Rounds 31	5	....
M. Hungville, Hungville 20	3	....
Hungiville 21	4	....
H. E Camp Estate, Bingham 263 tr 87	2	....
Brink & Brink, Bingham 268 tr 63	4	....
K. R. Hankinson, Hankinson 7	12	....
H. L. Morris, Morris 1	7	....
McKean Producing Co., Quintruple 21	3	....
Healey Petroleum Corp., DeGolier 11	7	....
E. D. Kepner Oil Co., Kepner 14	5	....
E. R. Maxwell, Franchot 3	2	....
Bradford Producing Co., Willett 9	12	....
Corwin & Gallagher, Corwin 13	3	....
I. D. Miller & Co., Quintruple 6	7	....
Forest Petroleum Corp., Quintruple 1	2	....
Stanley C. Morian, Morian 1	3	....
South Penn Oil Co., Melvin 292	2	....
R. O. Landers & Co., Landers 16	7	....
TIOGA-WAYNE FIELD—		
Allegheny Gas Co., Hall 1	¶5	4129
Mosherville Oil & Gas Co., Braistead 1	*	....
Penn-United Gas Co., Boom 2	*	....
Schellheimer & Co., Mittendorf 1	*	....
Penn Realty & Investment Co., Barcroft 1	¶2½	....
North Branch Development Co., Middaugh 1	*	....
Morgan-Hauge Co., Whitney 1	*	....
BUTLER COUNTY—		
M. B. Finnessy, Barkey 31	2	....
CENTER-MIDDLE FIELD—		
F. M. Broocks, Broocks 11	4	....
WASHINGTON COUNTY—		
National Gas Co. of W. Va., Stout 3	¶1¼	....
Carnegie Natural Gas Co., Brownlee 1	10	....
VENANGO-CLARION FIELD—		
Fryburg Motor Co., Sterner 3	¶½	....
R. & G. Foggan, Henderson 44	2	....
S. R. Lewis, Lewis 1	*	....

NEW YORK

Company, Well and Location	Initial Production Bbls.	Depth
ALLEGANY COUNTY—		
First National Bank of Bolivar, Childs 18	3	....
Ryder-Richmond Oil Corp., Fee 94	3	....
Fee 95	3	....
Miller Bros. & Co., Miller 16	17	....
Miller 18	22	....
Gilligan & Willard, Fee 21	5	....
F. W. Stephan, Kurtzholtz 8	2	....
Kurtzholtz 9	2	....
R. J. Dermitt, Dermitt 12	10	....
C. M. Lippert & Co., Warters 14	3	....
Mary Lippert, Lippert 23	2	....

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
DODDRIDGE COUNTY—		
Riley Yeater, McKinney 1	5	2077
BOONE COUNTY—		
G. L. Cabot, Inc., Dickinson 2	¶1½	....
The Pure Oil Co., Federal Coal 54	¶1	....
G. L. Cabot, Inc., Federal Coal 50	¶¾	....
LINCOLN COUNTY—		
Pridemore & Adkins, Miller-Topper 2	¶¼	2543
LOGAN COUNTY—		
Estep, Bland & Co., Baker 1	¶¼	....
MASON COUNTY—		
Berea Oil & Gas Corp., Jackson Coal Co. 1	10	....
MARSHALL COUNTY—		
Carnegie Natural Gas Co., Johnson 2	¶¼	3175
PUTNAM COUNTY—		
United Fuel Gas Co., Bird 1	¶¼	....
WIRT COUNTY—		
Biddle & Backus, Lewis 1	2	....
WAYNE COUNTY—		
Wayne United Gas Co., Wilson Hrs. 40	¶¼	3584

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
JEFFERSON COUNTY—		
Mt. Tabor Oil Co., Blackburn 20	2	1250
MORGAN COUNTY—		
Penn Oil & Gas Co., Smith 3	¶¼	1168
Davis Oil Co., Kincaid 31	¶¼	253
WASHINGTON COUNTY—		
McTaggert & Co., Meredith-Price 1	¶¼	1885

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
MEDINA COUNTY—		
The Preston Oil Co., Clapp 21	20	483
LORAIN COUNTY—		
Ramage & Willis, Armbruster 1	¶13¼	2795
LICKING COUNTY—		
Emerald Petroleum Co., Martin 8	¶¼	720
STARK COUNTY—		
Kime & Co., Taggart 1	¶13¼	4437
TUSCARAWAS COUNTY—		
Ohio Falls Drilling & Supply Co., Long 1	¶¼	5350

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
PIKE COUNTY—		
Van Burden & Co., Smith 1	*	1100

ILLINOIS

Company, Well and Location	Initial Production Bbls.	Depth
MONROE COUNTY—		
Webster Oil & Gas Co., Harmes 1	*	664

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
DAVIESS COUNTY—		
S. H. Russell & Co., Purcell 1	5	....
OHIO COUNTY—		
Brenner, Adams & Co., Bellamy 5	*	....

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
CLARE COUNTY—		
James McKay & Co., Bicknell 2	¶9	1408

LOUISIANA GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
EAST HACKBERRY—		
Yount Lee Oil Co., State 48	400	3046
Jim Oil Co., H. P. Erwin 5	280	3025
Calcasieu Oil Co., Watkins 32	2100	2985
EDGERLY—		
Moore & Emerson, Hunter 1	*	4280
LOCKPORT—		
Vacuum Oil Co., Farquhar 8	¶4	5632

MISSISSIPPI

Company, Well and Location	Initial Production Bbls.	Depth
HINDS COUNTY, (Jackson)—		
United Gas Pub. Serv. Co., Millsaps College 1, 34-6-1e	¶35	2503

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
LONG BEACH—		
Davis Investment Co., No. 19	200	7233
Hancock Oil Co., Signal 17	210	7187

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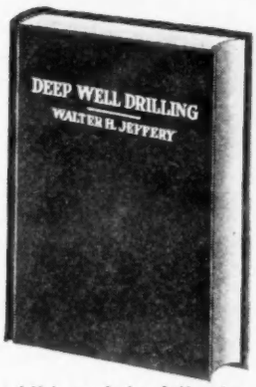
by WALTER H. JEFFERY



Re-written and revised to date, and enlarged by the addition of the following New Chapters:

GEOPHYSICAL PROSPECTING AND AIR MAPPING.
STRAIGHT HOLE DRILLING AND THE TREATMENT OF CROOKED HOLES.
WATER SUPPLY.
THE GAS-AIR LIFT METHOD OF PRODUCING OIL.
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Permits Granted for New Wells

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For Tabulation and Comparison See Market Section

CALIFORNIA

MIDWAY—Republic Petroleum Co., No. 35-A, 7-32-23.

PLAYA DEL REY—The Ohio Oil Co., Recreation Gun Club 12, 28-2-15.

SIMI—R. R. Renaud, Marr 17, 25-3-18.

LOUISIANA

CADDO PARISH—Calatex Oil & Gas Co. Inc., Shreveport, La., W. B. Hudson 1, 8-16n-16w, 2640 ft e of w line and 2185.96 ft s of n line of section. Louanna Oil & Gas Co. Inc., Shreveport, La., Hammock 1, 32-19n-16w, 660 ft n and 660 ft w of se cor of section.

CAMERON PARISH, (Drill) — Emerson & Moore, Vinton, La., Hunter 1, 21-9s-11w, 426 ft s and 100 ft e of nw cor se¼ se¼.

OUACHITA PARISH— J. J. Potts, Agt., Monroe, La., Roberston-Reid 1, 11-18n-4e, 1745 ft n and 780 ft e of sw cor of section.

RICHLAND PARISH, (Drill)—United Gas Publ. Service, Shreveport, La., Alice E. Purvis B-1, 34-17n-6e, 81 ft n and 599 ft w of center of section.

SABINE PARISH, (Drill)—Crescent Drlg. Co., Monroe, La., Byrd 2, 12-7n-11w, 330 ft s and 330 ft w of ne cor nw¼ ne¼. (Amended location) L. A. Hawkins, Natchitoches, La., Lionel A., Hawkins 1, 1-7n-11w, 560 ft e and 160 ft n of sw cor se¼ se¼. Pelican Nat. Gas Co., Shreveport, La., W. H. Buckley 1, 6-7n-10w, 330 ft n and 330 ft e sw cor of section. C. H. Tuttle, East Point, La., C. B. Byrd 1, 7-7n-10w, 505 ft s and 330 ft e of nw cor nw¼ nw¼.

TERREBONNE PARISH—*(Amended location) The Texas Company, Shreveport, La., L.-L. E.-Lake Barre 2, 30-21s-20e, 3280 ft s and 550 ft e nw cor section. The Texas Company, Shreveport, La., L. L. E.-*Lake Barre 3, 30-21s-20e, 3635 ft s and 380 ft e of nw cor of section.

KANSAS

COWLEY COUNTY—Dial and Foster, Olwessen 1, (owd) lot 4, blk 48, Musgrove addn, City of Winfield, 22-32-4e. McKnabb and Mission, Evans 1, lot 2, blk 42, Highland Addn, City of Winfield, 22-32-4e. Dial et al, Cranston 1, lot 9, blk 30, Highland Park Addn, City of Winfield, 22-32-4e.

ELLSWORTH COUNTY — Aylward et al, Stratman 2, ne nw se 1-17-10w.

McPHERSON COUNTY—Phillips Pet. Co., Smeltzer 1, c sw se 21-19-1w. Twin Drlg. and Tidal Oil, Hawkins 1, sw nw se 16-19-1w.

MORRIS COUNTY—Loomis et al, Lowery 1, nw c ne 22-16-7e.

SEDGWICK COUNTY—Magnolia Pet. Co., Wheeler 7, ne c 19-27-2e.

OKLAHOMA

CREEK COUNTY—Tusa Oil Co., Flinchum 2, sw se sw 11-19-9e. J. R. Allen et al, Folsom 1, sw c ne ne sw 32-17-11e. Bryan Pet. Co. et al, Fulsom 1, nw ne se 32-17-11e. Wilrough Oil Co., Stewart 1 (owd), sw c nw ne 32-17-12e. E. Shamblin et al, Wilson 1, se c ne ne 21-15-8e.

LINCOLN COUNTY—Atlantic Oil Producing Co., Beebe 1, ne sw sw 8-13-6e.

MUSKOGEE COUNTY—Taylor and Geiger, Tucker 1, se c ne nw 15-15-15e.

OKMULGEE COUNTY—W. B. Pine, Bradford 1 (owd), ne c nw se ne 1-12-13e.

POTTAWATOMIE COUNTY — Mid-Continent Pet. Corp., Archer 3, sw se se 14-6-3e.

SEMINOLE COUNTY — Tulsa Oil Co., Samele 1, ne sw ne 30-7-8e.

STEPHENS COUNTY—Centenial Oil & Gas Co., Dare 1, ne sw se 2-2s-8w.

TULSA COUNTY—A. D. McDonald, Wolfe 2, cel sw ne 24-16-13e.

TEXAS

ARCHER COUNTY — Bridwell Oil Co., Wichita Falls, F. C. Green, A, 47, 6, J. Levins sur, 150 ft from n and 234 ft from w line. Brown & Lickey, Wichita Falls, W. M. Coleman, 20, 1, B 79, Amer. Trib. sur, 150 ft from n and 200 ft from e line. Perkins & Cullum, Wichita Falls, R. Titken, 50, 4, B 13, F. C. & S. L. sur, 450 ft w of No. 3. Gohlke and Petroleum Prod. Co., Wichita Falls, L. W. McCrory, 1, Amer Trib. sur, 100 ft from s and w lines of Blk 264.

BEE COUNTY—H. H. Weinert et al, San Antonio, G. A. Ray, 100, 1, J. W. Williamson sur, 150 ft from n and e lines.

BEXAR COUNTY—Jones-Volz, San Antonio, F. Bonkowsky, 129, 6, 150 ft from n and w lines.

BROWN COUNTY — Lane, Anderson & Drewery Corp., Cross Plains, J. A. Baker, 180, 1, B 11, A. White sur, 1400 ft from n and 700 ft from e line. P. K. French, Fort Worth, D. Belvin, 95, 8, S 42, H&GN sur, 300 ft e of No. 5. H. P. Evans, Brownwood, H. J. Tervooren, 40, 1, S 11, HT&B sur, 450 ft from s and w lines.

CALLAHAN COUNTY—Hart Bros., Baird, C. Grisham, 80, 1, 2300 TE&L sur, 500 ft from s and w lines.

CHAMBERS COUNTY—Nat Hunter Prod. Co., Houston, Kirby, H, 22, 9, H. Griffith sur, 156 ft nw of No. 8.

CONCHO COUNTY—Mintex Oil Co., San Angelo, E. Waring, 1, S 163, T&NO sur, 400 ft sw of center of ne line.

DUVAL COUNTY—Magnolia Pet. Co., Dallas, Duval Ranch, 480, 1, S 96, BS&F sur, 260 ft from s and e lines. Cole Petroleum Co., Laredo, R. V. Benavides, 40, 74, S 19, B 8, M. Arispe sur, 144 ft from nw and 63 ft from ne lines.

EASTLAND COUNTY—J. T. Arnold et al, Eastland, M. E. Miller, 53, 1, S 27, B 4, H&TC sur, 330 ft from w and 1450 ft from s line.

FISHER COUNTY — S. C. Yingling, Fort Worth, Wm. Flanigan, 20, 1, S 201, V 1, BBB&C sur, 165 ft from n and 330 ft from e line.

FORT BEND COUNTY—Brain-Coombs et al, Humble, J. R. Farmer, 100, 1, J. Scott sur, 250 ft from n and 950 ft from w line.

GREGG COUNTY—Dodd & Markey, Tyler, J. F. Holt, 40, 1, H. Edwards sur, 615 ft from w and 707 ft from s line. Marine Corp., Dallas, L. D. Crim, 30, 2, W. P. Chisum sur, 275 ft from w and 330 ft from s line. W. J. Collins, Tyler, H. T. Elder, 4, 1, M. Van Winkle sur, 215 ft from w and 195 ft from s line. Barbier, Haberle & Gibson, Jacksonville, Mrs. A. C. Todd, 1, M. Dillard sur, 76 ft from n and 53 ft from e line Blk. 24. Byrd-Frost, Inc., Longview, J. J. Reppond, 50, 4, D. Sanchez sur, 330 ft from n and w lines. Sells Pet., Inc., Tyler, E. Sibley, 24, 2, M. Van Winkle sur, 225 ft form n and 140 ft from w line. Navarro Oil Co., Houston, E. L. Walker, 30, 2, B 5, M. Dillard sur, 189 ft from e and 330 ft from s line. G. P. Mitcham, Dallas, C. Christian, 16, 2, G. W. Hooper sur, 330 ft from e and 257 ft from s line. S. R. Thrasher, Jr., Longview, J. M. Christian, 4, 1, G. W. Hooper sur, 265 ft from w and 177 ft from s line. Geo. L. Pace, Dallas, W. Anderson, 13, 2, G. W. Hooper sur, 150 ft from e and 137 ft from s line; 3, 150 ft e of center of w line. Farlyn Oil Co., Houston, M. Roden, 5, 1, M. Dillard sur, 150 ft from n and 198 ft from w line. Corley & Blair, Longview, W. E. Bumpas, 15, 3, W. H. Castleberry sur, 319 ft from w and 200 ft from s line. H. L. Barrett, Kilgore, J. S. Bean, 1, M. Van Winkle sur, 85 ft from se and 100 ft from sw line. Continental Oil Co., Fort Worth, B. C. Todd, 40, 3, Wm. Castleberry sur, 520 ft from w and 200 ft from s line. Sutton & Hawks, Tyler, J. A. Whitaker, 26, 4, C. H. Alexander sur, 330 ft from s and w lines. B. F. Phillips, Gladewater, Fee, 1, 1, M. Dillard sur, 110 ft from e and 115 ft from s line Blk. 78. Columbia Oil & Gas Co., Dallas, J. G. McGrede, 41, 2, D. Sanchez sur, 314 ft from w and 1041 ft from s line. F H E Oil Co., Fort Worth, J. M. Christian, 7, 1, G. W. Hooper sur, 183 ft from w and 315 ft from n line. Mr. L. M. Hewit, Gladewater, Fee, 2½, 1, H. R. Hokit sur, center of Blk. 13. Lonnie Glasscock, Longview, Alexander, 5, 1, D. Sanchez sur, 261 ft from n and 204 ft from e line. Steen Drilling Co., Inc., Dallas, W. D. Lacy, 163, 3, E. H. Gresham sur, 330 ft from s and w lines; 4, 670 ft n of No. 3; 5, 330 ft e of center of w line. Foshee & Bradley, Gladewater, Fee, 1, H. R. Hokit sur, 10 ft from s and w lines of Blk. 44. Humble Oil & Refg. Co., Houston, A. L. Huhges, 91, 7, Geo. Hampton sur, 1335 ft from e and 200 ft from s line; J. M. McFarland, 57, 3, L. J. Rigsby sur, 330 ft from s and e lines; T. B. Harris, 175, 7, W. H. Castleberry sur, 760 ft se of No. 3. Magnolia Pet. Co., Dallas, O. R. Hilburn, 55, 3, W. P. Chisum sur, 350 ft from w and 496 ft from s line. Atlantic Oil Prod. Co., Dallas, M. Fisher, 65, 4, W. H. Castleberry sur, 660 ft se of No. 2. Sun Oil Co., Dallas, J. S. Elder, 75, 2, Jno. Wilkinson sur, 288 ft from w and 330 ft from s line. Yount-Lee Oil Co., Beaumont, J. D. Davis, A, 80, 4, Wm. Robinson sur, 680 ft ne of No. A2. Shell Pet. Corp., Dallas, P. M. Bates, 65, 4, M. Van Winkle sur, 330 ft from s and w lines. Gulf Prod. Co., Houston, A. Spear, 277, 13, M. Van Winkle sur, 330 ft from s and e lines.

GLASSCOCK COUNTY — Mann & Currie, San Angelo, Poston, 80, 1, S 27, B 34, T&P sur, 1980 ft from e and 330 ft from n line of section.

GUADALUPE COUNTY — Humble Oil & Refg. Co., Houston, D. J. Denman, 150, 3, Wm. Arrington sur, 885 ft from w and 150 ft from s line.

HARDIN COUNTY — Rio Bravo Oil Co., Houston, Fee, 320, B 125A, BBB&C sur, 200 ft nw of No. B124A.

HOWARD COUNTY—Cardinal Oil Co., San Angelo, W. R. Settles, 20, 2, S 6, B 32, T&P sur, 185 ft from s and 209 ft from e line.

JACK COUNTY — Texas Plains Oil Co., Wichita Falls, L. S. Wright, 180, 1, Z. S. Brooks sur, 150 ft e of center of w line.

MILLS COUNTY—J. C. Ellis, Brownwood, C. B. Vaughn, 160, 1, S 8, B 1, D. Hanson sur, 750 ft from s and e lines.

NUECES COUNTY—Gulf Coast Oil Company, Houston, J. B. Sedwick, 192, 2, 150 ft e of center of w line.

RUSK COUNTY—East Shore Oil Co., Henderson, T. Fox, 40, 3, A. Cormack sur, 163 ft from n and 150 ft from e line. Wheelock & Collins, Corsicana, D. Wells, 220, 6, Y'Barbo & Hobson sur, 1200 ft from n and 150 ft from w line. Roberts-Roscoe, Henderson, C. E. Christian, 23, 4, R. W. Smith sur, 250 ft from n and w lines. Woodley Pet. Corp., Shreveport, J. Ladd, 60, 3, Ruddle & Chisum sur, 1041 ft from n and 200 ft from e line. Overton Refg. Co., Overton, L. L. Jones, 6, 1, F. Cordova sur, 150 ft from n and 250 ft from w line. R M V Oil Co., Henderson, F. B. Wilson, 51, 2, B 27, M. J. Pru sur, 150 ft from n and 606 ft from e line. Mid-Kansas Oil & Gas Co., Shreveport, La., T. O. Warren, 60, 2, J. B. Cadena sur, 330 ft from n and 588 ft from e line; E. E. Moores, 200, 10, J. B. Cadena sur, 1315 ft from n and 674 ft from w line; M. C. DeGuerin, 158, 3, J. B. Cadena sur, 330 ft from s and e lines. Stanolind Oil & Gas Co., Longview, M. Schuyler, B, 73, 3, J. B. Cadena sur, 559 ft from w and 1066 ft from s line. Humble Oil & Refg. Co., Houston, J. H. Silvey, 65, A6, Geo. Berry sur, 330 ft from n and 587 ft from w line; W.P. Moore, C, 17, 2, W. P. Moore sur, 340 ft from s and w lines; H. A. Piercy, B, 24, 1, H. A. Piercy sur, 450 ft from n and 330 ft from w line; J. E. Golver, 130, 8, A. Melton sur, 1022 ft from e and 330 ft from s line; (amended location) E. S. Thrash, 42, 2, F. Cordova sur, 235 ft from n and 422 ft from e line. Gulf Prod. Co., Houston, S. B. Stone, 108, 3, D. W. Campbell sur, 330 ft from n and e lines.

(Continued on page 68)

Wildcat Reports From All Sections

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HENDERSON COUNTY—		
South American Drlg. Co., D. R. Boone 1	*	4547

ANDERSON COUNTY—C. R. Helmuth et al (was H. B. McConnell's) Walston 1, M. Main sur, dr 910 ft.

BOWIE COUNTY—Harry W. Elliott-Logan et al's J. W. Smith (80-ac) 1, Chas. Lewis sur, Pecan chalk 739-1045 ft, top Austin chalk 2065 ft, top anhydrite 3429 ft, top Trinity sand series 4052 ft, sd in red rock 4503 ft. W. S. Langford et al's W. W. Whybark (100-ac) 1, J. H. Dyer sur, sd 1880 ft. Lee J. Timberlake et al's Tidwell 2, L. M. Rice sur, elev 290 ft, sd 3010 ft.

CASS COUNTY—Wm. S. King & Olds et al's J. E. Anthony (347-ac) 2, J. C. Byers sur, top Nacatosh sand 1710 ft, sd 1760 ft. C. E. Murdock et al's G. W. Coody-First Nat'l Bank (85-ac) 1, Evans Watson sur, elev 401 ft, Pecan chalk 2522-2953 ft, top Austin chalk 3490 ft, sd in Georgetown lime 4390 ft. Pigg & Davis et al's Ray Bryan (88-ac) 1, Albert H. Latimer sur, top Nacatosh sand 1785 ft, Pecan chalk 2316-2638 ft, sd 2860 ft.

CHEROKEE COUNTY—Bridges & Chandler's Berryman (300-ac) 1, H. Kimble sur, sd 1000 ft. Denman et al's Mrs. Renfro (445-ac) 1, Elisha Moore sur, sd dk. Wilson-Stubb Oil Corp.'s L. Roberts (100-ac) 1, John D. Wolfin sur, sd 2035 ft. Harper & Parkinson's J. F. Lowery (139.6-ac) 1, C. B. Jennings sur, rig. Merry Bros. & V. C. Perini's A. Kelly (90-ac), M. S. Coy sur, rig.

DALLAS COUNTY—Long Creek Dev. Co.'s T. C. Lupton (160-ac) 1, J. Johnson sur, material.

DELTA COUNTY—Commerce Oil & Dev. Co.'s W. B. Djernett (32-ac) 1, E. Chick sur, Austin chalk 3112-72 ft, sd 3315 ft.

ELLIS COUNTY—Carl Brocks et al's G. W. Colladay (50-ac) 1, N. C. Hilburn-John Bone surveys, ur 1802 ft. Harry Moss (Community Oil Co.'s) F. L. Reeves (300-ac) 1, Larkin Newton sur, dk. E. M. Rogers et al's John L. Winn 1, Orland Wheeler sur, sd 1435 ft. Worthen Pet. Co.'s M. Cerf (227-ac) 1, Millican sur, sd 2269 ft.

HENDERSON COUNTY—J. M. Rogers-Ed. Legg et al's M. H. Gossett (103.5-ac) 1, L. D. Stover sur A-87, sp and abn. South American Drlg. Co.'s D. R. Boone (485-ac) 1, Thos. Palmer sur, elev 497 ft, top Midway 920 ft, top Navarro 1740 ft, top Pecan chalk 2640 ft, Austin chalk 3520-3940 ft, top Woodbine sand series 4371 ft, top red beds 4532 ft, dry and abn 4547 ft. Alma Pet. Corp.'s T. B. Wofford (529.5-ac) 1, B. C. Walters sur, spd and sd.

HOPKINS COUNTY—E. L. Chapman et al's Jumper 1, sd 230 ft. Harmony Oil Co. (Roark et al's) J. L. Taylor (88-ac) 1, John Polk sur, sd 540 ft. S. M. Stauffer-Ike Horn et al's First Nat'l Bank (100-ac) 1, Jas. Kilgore sur, sd 500 ft.

HUNT COUNTY—Russell et al's Brooks & Quattlebaum 1, Juliet Porter sur A-819, sd 1550 ft. E. H. Smith (was Foster & Earl) et al's Whitten & Clark-H. Landrum 1, sd 350 ft.

KAUFMAN COUNTY—E. E. Hoffpauir et al's County Poor Farm (524-ac) 1, D. Falcon sur, sp and sd. Rogers & Green et al's M. N. Gossett (240-ac) 1, L. D. Stover sur, sp and abn.

LAMAR COUNTY—C. W. Davy (Keener O&G Co.'s) E. H. McCuistian (405-ac) 1, K. Wood sur, fsh 740 ft. Doyle & Jondreau et al's Joe Horn (178-ac) 1, R. P. Mayo sur, sd 945 ft. Optometrists Oil Club's A. M. McFadden (25-ac) 1, Jos. Deck sur, sd 1675 ft.

LEON COUNTY—Cooper et al's Lynch 1, sd 1930 ft. Leon County Oil Co. (Claude Kavanaugh et al's) John Morris (200-ac) 1, A. F. McWhorter sur, sd 1730 ft. Selzer Drilling Co.'s J. M. Blair (1235-ac) 1, L. Hibbard sur, lcn. Sun Oil Co.'s Mrs. Ella Grayson (229.32-ac) 2, Marie de la Conception sur, elev 400 ft, top Austin chalk 3457 ft, top Taylor marl 3927 ft, top Eagleford shale 4465 ft, top Georgetown between 5812-5830 ft, dr 6010 ft.

MORRIS COUNTY — Leonard Pet. Co.'s Staggers 1, top Pecan 2526 ft, dr 3030 ft.

RAINS COUNTY—C. H. Bayless et al (was Berry & Hale's) Owenby (160-ac) 1, J. Alexander sur, top Midway 1130 ft, Austin chalk 3390-3572 ft, sd in Eagleford shale 4036 ft.

RED RIVER COUNTY—Concord Oil Co.'s J. R. Diillahunty 1, I. Moore sur, sd 2420 ft. M. Harris-C. M. "Dad" Joiner et al's E. Howison 1, W. Humphries sur, elev 540 ft, sd 2215 ft. Hoffman & Henson's H. H. Lennox (772-ac) 1, J. Edmondson sur, sp and sd. L. G. Priest et al's J. M. Stiles (463-ac) 1, Levi Dean sur, Blossom sand 730-823 ft, sd in Austin chalk 1020 ft. Gibbs et al's Mace 1, co to deepen from 3538 ft.

RUSK COUNTY—A. J. Brown et al's Strong (57-ac) 1, John Hallam sur, elev 380 ft, sd 855 ft. Byrd & Frost, Inc.'s, Buckner (49-ac) 1, J. Peyton sur, elev 334 ft,top Pecan chalk 2818 ft, sd 2940 ft. Cap Rock Oil Co. (Ross & Seward's) L. T. Burton (125-ac) 1, Juan J. Y'Barbo sur, elev 439 ft, base Pecan chalk 2905 ft, Blossom sand dry 3000-3011 ft, fsh drill stem 3110 ft. Hathaway et al (was Laster Oil Co.) B. B. Gray (171-ac) 1, Jas. McLean sur, elev 315 ft, Pecan chalk 2180-2537 ft, top Austin chalk 2980 ft, sd in chalk and shale 3090 ft. Albert W. Jones et al's J. M. Grant (100-ac) 1, T. J. Walling sur, sd 2375 ft. Peyton Bros. et al's Perry 1, Levi Sparks sur, elev 420 ft, Pecan chalk 2680-3052 ft, Austin chalk 3490-3680 ft, tested 4 mil ft gas at 3682-3719 ft and comp. as gasser. Nat Sadler-Paulette et al's Ed. Sparks 3, Abner Nail sur, sd 1313 ft. Mrs. S. O. Thompson et al's C. A. Price (1535-ac) 1, Hugh Millican sur, top broken Pecan chalk 2358 ft, hard chalk at 2400 to 2616 ft, Austin chalk 3124-3175 ft, top Georgetown lime 3194 ft, sd in lime 3280 ft. T. E. Allday & Dutton's R. M. Leath 1, sd 1250 ft.

SMITH COUNTY—Acme Drilling Co.'s J. C. Horton (50-ac) 1, Abstract No. 204, lcn. J. R. Meeker et al's Lewis Bacon (55-ac) 1, S. W. Sparks sur, Pecan chalk 2805-3255 ft, Austin chalk 3680-3908 ft, tested water in Woodbine sand at 3920 ft.

TITUS COUNTY—C. M. "Dad" Joiner Pet. Co.'s C. D. Browne 1, Bard Evans sur, Pecan chalk 1675-1960 ft, sd 2250 ft. C. B. Polk (Cook) et al's M. C. Rogers (1500-ac) 1, B. Moore sur, sd sandy shale 3249 ft.

UPSHUR COUNTY—Cranfill-Reynolds Co.-Leon Russ-Harry Reynolds & W. P. Luse' M. L. Rash (106-ac) 1, E. N. Eubanks sur, elev 329 ft, Pecan chalk 2422-2965 ft, Austin chalk 3652-3700 ft, top Woodbine series 3710-3729 ft, cem cas after showing 35 degree crude on drill stem test. Gillette-Tarr & Potter's D. A. Irions (130-ac) 1, D. B. Lucas sur, rig. J. W. Love et al's T. M. Bain (63.9-ac) 1, elev 372 ft, top Pecan 2465 ft, dr 2750 ft. Stanolind O&G Co.'s A. Newsome (32.33-ac) 1, Calvin Anderson sur, elev 398 ft, top Pecan 2420 to 2980 ft, dr 2910 ft. W. F. Snebold & Pilot Oil Co.'s J. W. Ray (117-ac) 1, A. H. Woods sur, elev 403 ft, top Pecan chalk 2380 to 2855 ft, top Blossom sand 3243 ft, dr 3360 ft.

VAN ZANDT COUNTY—L. R. Barton et al's C. L. Hubbard-Nixon 1, M. J. Cadena sur, sd 2000 ft. Clifford Oil Co.'s H. F. Haake (100-ac) 1, John Hawks sur, sd 2872 ft. Hutcherson-Anderson & L. G. Priest's C. G. Beckham (100-ac) 1, A. S. Johnson sur, elev 464 ft, Pecan chalk 3535-3760 ft, trace oil and gas 4885-4890 ft, dr 4905 ft. M. Thomasson, Inc., (was W. B. Palmer and also Texas Chief Oil & Roy. Corp.'s) J. P. Foster 1-A, F. Montgomery sur, sd 3200 ft. Phillips et al (was Dennis Oil Corp. & also H. Harper's) C. W. Morris (160-ac) 1, C. L. Morrison sur, elev 496 ft, sd 3185 ft. Pure Oil Co.'s V. T. Davis 1-T, (Van Trinity sand test) elev 488.4 ft, Pecan chalk 1704-1850 ft, Austin chalk 2635-2820 ft, top Woodbine series 3028 ft, top Comanche 3732 ft, top Georgetown lime 3752 ft, tested salt water in top of Paluxy sand at 4729 ft, top anhydrite 5535 ft, dr sand 6467 ft.

WOOD COUNTY—Talko Oil Co.'s Ross 1, sd 1350 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp — spudding; sr — straight reaming; std — standardizing; sw — salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

SOUTH TEXAS

BASTROP COUNTY—Birdwell et al's White 1, Nancy Roberts sur, 4 mi se Belton, dr 475 ft last rept. Humble O&R Co. & Sun Oil Co.'s Powers et al 1-B, Blk 197, 4 mi ne Bastrop, coring 2225 ft. E. R. Marts & Beavens' Wm. Bahm 1, J. Standifer sur, td 1683 ft, abn; Wm. Bahm 2, 350 ft e No. 1, skid dk. Texas Dev. Co.'s C. H. Ray 1, Thos. Christian sur, 1½ mi ne Elgin, dr 2660 ft.

BEE COUNTY—Buck Oil Corp. (Buchanan and Lefevre) George Ray 2, s offset Gremmel 1, Williamson sur, Pettus (Damac) sand 3904-13 ft, 6⅝ inch csg set 3902 ft, flow 750 bbls on ¼ choke. J. M. Davis et al's Geo. Ray 1, (formerly Morgan) w Damac lease, Jno. Williamson sur, Pettus (Damac) spud in. Houston Oil Co.'s J. F. Portis 3, e No. 2, Pettus (Damac), A. Smalley sur, dr 3800 ft. Humble O&R Co.'s Laura Thompson 1, Garrett Roche sur, dr 5111 ft. McMurray et al's (formerly Weinert) Geo. Ray 1, Jno. A. Williamson sur, set 240 ft surface csg. Slick Seelingson, Inc.'s, Geo. A. Ray 4, n offset Portis 3, G. A. Kerr sur, Pettus (Damac), lcn; George A. Ray 3, e offset Gremmel 1, G. A. Kerr sur, Pettus (Damac), sand 3884-90 ft, ds and show oil, to set csg. The Texas Co.'s L. Gremmel 2, John Pace sur, w offset No. 1, Pettus (Damac), ru; L. Gremmel 3, n offset McMurray 1, ru; Gremmel 4, w offset No. 3, lcn; Gremmel 5, w offset No. 4, lcn.

BEXAR COUNTY—Alamo Nat'l Gas Co.'s G. J. Gembler 2, A. Menchaca sur No. 51, Dobrowolski pool, prep to complete, td abt 710 ft. Anderson, Ingersoll & Miller's Stemburg, 9 mi sw San Antonio, F. Bolen sur, dr 320 ft. J. E. Anderson's Irrigated Farms 1, C. Logan sur, near Kirk, 20 mi sw San Antonio on Chicon Lake Fault, td 1773 ft, shot 200 qts 1120-80 ft, plug back 1190 ft. S. W. Blount's S. A. Land & Dev. Co. 1, 1 mi e Medina river on Palo Alto rd, 12 mi s San Antonio, sd 520 ft. Jno. T. Callahan's J. H. Buch 1, J. W. McCamley sur, 9 mi w S. A., sd 600 ft. Chiquita Oil Co.'s (Witherspoon) Pollock 1, J. W. Rialls sur No. 11, Cooksey area, abn at 1750 ft; E. H. Cooksey 3, J. W. Rials sur, Cooksey, lcn; Hunter 1, J. Martinez sur, ½ mi s Cooksey pool, dr 1000 ft. Eckert et al's Edward Heirs 1, Martinez sur, 8 mi se San Antonio, Gonzales Road, sd 110 ft. Gatlin Oil Co.'s I. A. Beck 10, J. Montez sur, Dobrowolski pool, dr 225 ft. Ewell Neill's J. M. Watson 1, Martinez sur, 10 mi s San Antonio, sd 2266 ft, Schneider, Rees et al's Claussen 1, ne San Antonio, SJ&A Sur No. 17, sd 1143 ft. Van Duyn et al's Bradden 1, 1 mi n Medina river, 8 mi w San Antonio sd, 650 ft.

BLANCO COUNTY—Hardy Sitton's Standeford 1, sur 155, 3¼ mi nw Blanco City, td 1260 ft. Thomas Hicks et al's Specht & Wied-

ner 1, Thos. M. Fowler sur No. 27, 2 mi s Twin Sisters, sd 1635 ft.

CALDWELL COUNTY—Joe Bruner's Malone 1, A. Floyd sur, 2 lcns s Salt Flat, sd 2702 ft, Georgetown. T. W. Cole's J. M. Pierce 1, S. Seal sur, n Dunlop wells, to spud. Detroit Texas Dev. Co.'s (M. O. Rayor) Dunlop 2, Solomon Seal sur, 2¼ mi ne Luling, 2503 ft, show sulphur water in Edwards, plug back. Meyer Exploration Co.'s Walker 1, Solomon Seal sur, 3 mi w and n Luling, dk.

DUVAL COUNTY—Cole Pet. Co.'s Benavides 74, Blk 8, sur 19, Mariano Arispe Grant, Cole-Bruni pool, set 6⅝ inch csg, sand 1720-28 ft, completed 75 bbls. Duval Oil Corporation's Bishop Cattle Co.'s Bishop Cattle Co. 7, sur 135 Gov't Wells field (S&O) td 2360 ft, fsh for liner. Frank Garvis et al's Schallert 2, blk 10, Cain & Smith sur 55, Palangana Salt Dome, dr 820 ft, last rept. O. W. Killam's Sutherland 1, sur 7, dr 1750 ft; Peters 1, sur 1, dk. Magnolia Pet. Co. & Vacuum Oil Co.'s Duval County Ranch Co. 1-B, Sec. 96, 1 mi s and 5 mi e S. R. C. lcn. Bishop Cattle Co. 5, Sur 135, Gov't Wells field, ru. Thomas & Tarver's Welder Wood 1, 16 mi from S&O pool, sec 269, Welder-Wood ranch, sd 2303 ft.

FRIO COUNTY—Arthur H. Wray's Roche 1, Sec 123, A. Hutzler sur, near Big Foot, 1500 sw Burns 1, td 3540 ft, prep to re-dr.

GOLIAD COUNTY — Benedum and Trees and Plymouth Oil Co.'s Park 1, BS&F sur, No. 8, 2900 ft se Gibson Parks 1, sand 4543-55 ft, show oil and gas, csg set 4480 ft, set cement in 63 ft open hole, to dr out. Camp & Stanolind O&G Co.'s Pettus 3, Trinidad sur, Charco area, sand 4284-91 ft, now show, now sd 4464 ft for fuel. Simms Oil Corp. & H. H. Weinert's Mike Stepke, W. H. Hughes sur, 1 mi ne Slick pool, dr 3224 ft. L. Neal et al's Pettus 1, J. M. Pettus tract, Pedro Trevino sur, w Goliad, sd 4020 ft.

GONZALES COUNTY—Crowder Oil Co.'s Preston 1, W. W. Pace sur, spud in. Johnson-Matlocks O&G Co.'s J. James 1, M. A. Willimson sur, lcn.

GUADALUPE COUNTY—Barnhill et al's Hoffman 1, DeWitt sur, between Seguin & Darst Creek, sd abt 1760 ft. W. M. Eiser et al's Wells 1, ne quarter Jose de la Baume sur, coring 3515 ft, top chalk 3445 ft. Humble Oil and Refining Co.'s Dan Denman 3, William Arrington sur, Camp pool, Darst Creek, e No. 2, dr 2240 ft, top chalk 2214 ft. J. M. Scott's E. Drumm 1, C. Campbell sur, near Staples, no rept.

HIDALGO COUNTY—B. H. Adams' (Barrett & Kanellos) J. D. Brock 1, Blk. 15, Porcion 79, 15 mi nw Mission, dr 900 ft. Davenport et als' Wells 1, 30 mi w Mission, ru. La Joya O&G Co.'s W. L. Hart 1, w part of county, Leo Ryal's 1, Share 38, Porcion 80, dr 1628 ft. Dayle L. Smith Oil Co.'s Fernandez 5, Porcion 75, 21 mi w McAllen, sd 4026 ft; Daskman 3, 900 ft w Fernandez, spud in.

JIM HOGG COUNTY—L. W. Conner et al's Holbein 1, blk 7, sur 7, Reuben Holbein Oil lease, sub of share 3, Las Animas Grant, dr 70 ft. R. F. Foree et al's Holbein 1, blk 54, sur 9, Reubin Holbein oil lease sub of share 3, Las Animas Grant, dr 1550 ft. T. P. Morgan's Fee 1, Share 19, Palo Blanco Grant, set 133 ft 12½ csg, w.o.c. United N&S Oil Co.'s Hinnant 1, Sur 164, Randado field, dr 1210 ft.

JIM WELLS COUNTY—Mag. Pet. Co.'s Seelingson 1, 15 mi s Ben Bolt, lcn.

KARNES COUNTY—Jones et al's (J. Morrisey) Cochran 1, Daniel B. McConnel league, e Kenedy, dr 1625 ft. V. F. Neuhaus' Della B. Tips 1, 5 mi se Kenedy, Carlos Martinez sur, sd 2036 ft for fuel oil.

KENDALL COUNTY—Borgett et al's W. Hagg 1, w Avery sur, sd 1250 ft. Dixon Oil Co.'s Behr, Jessie Wilson sur, 3 mi s Sisterdale, sd 2715 ft.

KERR COUNTY — Evans and Gant's Jeff Love 2, sec 1592, ½ se discovery, sand 5835-39 ft, bailing 5400 ft in oil, 31.5 gravity, corrected running 5 3/16 in csg; Jeff Love 3, J. Martinez Sur. No. 1594, lcn. Herbert & Halbert's J. D. Witt 1, W. H. Hamilton sur, Sec 1923, td 100 ft, move on to deepen.

KLEBERG COUNTY—Barbee and Hunter's J. D. Finnegan 1, el Pasidzo sur, 7 mi s Kingsville, td 3031 ft, to deepen.

LA SALLE COUNTY—Buckley Ranch O&G Co.'s Buckley et al 1, sur 37, Buckley-Walling ranch, dr 5110 ft. Salt Lake City Oil Co.'s J. F. Mayes 1, Sec 19, Blk 20, I&GN sur, sd 1100 ft (dropped).

LIVE OAK COUNTY—Henderson Coquat et al's H. Hewitt 1, Thomas Adams sur, Sec. 4, sd 445 ft. Houston Oil Co.'s Cartwright 24, J. M. Colchado sur, Mt. Lucas Field, dr 5300 ft. Phillips Pet. Co.'s Sanger 1, Thomas Welch sur, abn 4007 ft. V. G. Schimmel's C. L. Terrell 2, D. O'Boyle Sur, dr 450 ft.

NUECES COUNTY—Gulf Coast Oil Co.'s J. Sagarin 1, H. L. Kinney sur, Saxet, dr 2950 ft, last rept; Elder 1, Saxet, sd 5070 ft; Sedwick 2, e offset Harrell 1, Saxet, lcn; Sedwick 3, e offset Houston's Harrell 1, lcn. Houston Oil Co.'s Harrell 1-A, H. B. Shepherd sur, Saxet, sand 4552-60 ft, completed 200 bbls. C. E. McCarthy's 1, Saxet, making lcn. Neal-Milton & Kepley Prod. Co.'s Roark 2, Saxet, lcn. Saxet Oil Co.'s Weil 1, dr, depth not rept; Dunn 6, Saxet, td 4195 ft, prep to deepen.

MAVERICK COUNTY — I. N. Boicourt's Bandera School Land 2, sd 2284 ft. Texas Gas Utilities Co.'s Chittim 8, Sec. 129, Blk 7, I&GN sur, Chittim Field, sd 4875 ft.

McMULLEN COUNTY—A. E. Adams' Martin 1, L. F. Melon sur, 15 mi sw Tilden, sd 363 ft. Jacob, Buzzini & Pickett's Brewer 1, 2½ mi n Jacob 1, Spark sur, Wichett blk, to spud in.

MEDINA COUNTY—Frank A. Brown's Jacob Fohn 1, J. F. Tory sur, 8 mi s Hondo, sd 922 ft. C. J. Webster O&G Co.'s (National) Adams 1, Hillemeyer Sur No. 25, near Devine, top Austin chalk 2526 ft, prep dst.

REFUGIO COUNTY — Blanco Creek Oil Corp.'s Dammann 1, blk 18, Bonnie View Ranch sub, 8 mi s and e Refugio field, sd 4685 ft. G. C. Dixon's P. M. Peck 1, Sec. 24, Bonnie View Ranch, set 100 ft 12½ inch csg, now sd. Humble O&R Co.'s M. V. O'Conner 2, John Keathing sur, near Victoria line, 933 ft n and 75 degrees w O'Conner 1, dk. Larcro Gas & Pet. Co.'s Strauch 4, lot 6, Blk. 2, Refugio, top sand 3636 ft, set 6⅝ inch csg, woc. Moody-Seagraves Prod. Co.'s St. John 2-A, Refugio sur, sand 5504-18 ft, 6⅝ in csg set 5505 ft, pull screen to deepen. United Prod. Co.'s W. J. Fox 2-A, Hews and Brown sur, Refugio, sand 6464-74 ft, set 5½ csg 6463 ft, woc.

SAN PATRICIO COUNTY—John F. Camp's Jackson 1, sw cor of southwest ¼ Sec. 30, 3 mi n of Edroy, ru. Saxet Oil Co.'s E. M. Rachel 18, J. N. Seguin sur, White Point, td 4433 ft, completed 20 bbls oil and gas.

STARR COUNTY—R. E. Johnston's Goodrich 1, tract 5, Porcion 81, ru. Stryalls Oil Corp.'s M. E. Salinas 1, Share 38-C, Porcion 80, dk, dr water well, R. B. Suttles' Guerra 1, Porcion 110, dr 810 ft. Jess Williams' Welch 1, Pedernal Grant, set 8 inch csg 425 ft, woc.

TRAVIS COUNTY — Fritz Fuchs W. M. Scheiffer 1, A. C. Caldwell sur, sd 520 ft; A. F. Smith 1, Kimbor sur, lcn. C. R. Franklin's J. Wilson 1, A. Alexander sur, sd 1195 ft. Henze & Ray's J. M. Hatch 1, center Hamilton sur, sd 565 ft. Bass & Fuch's R. A. Chadwich 1, A. C. Caldwell sur, dk. Waldron et al's T. Cook 1, D. H. Monor sur, sd 1465 ft (dropped).

VICTORIA COUNTY—C. R. & M. Co. & C. B. Bunte, Inc.'s, C. R. Keenan 1, center 2500-acre ranch, M. Leon sur, sand 5812-91 ft, ds and show 600 lbs 5 min through ¼ inch chokes top and bottom, mud in tester show plenty oil, set 7 inch OD csg, woc. Houston Oil Co.'s Konrad 1, T&NO sur, Beck Salt Dome, n Victoria, td 5310 ft, plug back to abt 4850 ft, swabbing.

WEBB COUNTY—Usher Carson's Webster 4, sur 684, Carolina-Texas Pool, sand 3030-52 ft, set 4½ inch csg 3030 ft, completed 25 bbls. French Oil Corp.'s Benavides 5-A, Sur 659, dr 100 ft. Harris, Hayes & Newton's Laurel 1, blk 5, sur 215, dr 2470 ft. O. W. Killam's Bruni 1, Sur 445, dr 2877 ft; Bruni (Ranchito) 4, J. V. Borrego Grant, dk. Mag. Pet. Co.'s Benavides 6, sur 660, Cole-Bruni field, ru. Power & Detterheim's Cowan & Goss 1, sur 1606, sd 300 ft. Rosenberg, Johnson & Peacock's Laurel 1, Blk 10, sur 271, Carolina Texas pool, dr 1000 ft.

WILLIAMSON COUNTY — Burns et al's Wilder 1, R. Owens sur, dr 1496 ft. Hays and Gee's E. G. Johnson 1, B. C. Low sur, s Georgetown, sd 1595 ft. McLean's et al's Miller 1, Manlove sur, sd 1670 ft. R. S. Wilson's J. S. Speckels 1, J. Jordan sur, 1 mi n Coupland, sd 890 ft.

WILSON COUNTY — August M. Blume's Nickelson 1, G. Diaz sur, 2½ mi s Floresville, sd 1600 ft.

ZAPATA COUNTY—Allied O&G Co. & Allen & Morris' Gutierrez 21, Share 4, Fansler Partition, Comitas Grant, Escobas area, lcn. Bob & Richey's (Duke) Martinez 28, Blk 24, W. R. Duke sub, Charco-Rendondo grant, lcn; Martinez 29, Blk 24, lcn. Ballard & Mercer's Flores 1, Blk 27, Marks sub, Porcion 37, dr 1439 ft. Brogan & Belcher's M. Garza Estate 1, Blk 62, C. A. Douglas sub, Comitas Grant, ru. F. M. Blair & Son's Montemayor 1, Blk 1, sur 63, Escobas field, ru. Daniels & Hills Montemeyor 1, Blk 7, Sur 64, Escobas area, sands 1307-15 ft, 6⅝ in csg set 1307 ft, test little oil, dr deeper. F. H. Etheridge's Jose Bustamante (Sun), Jose Bustamante 5, share 35, Fansler Partition, Comitas Grant, Escobas pool, lcn; Bustamante 6, Share 35, Fansler Partition, Comitas Grant, Escobas pool, dr 500 ft; Winch & Henne 2, Martinez pool, sur 286, clear lcn. Grayburg Oil Co.'s C. F. Martinez 1, Sec. 4, Jennings pool, sd 2118 ft. O. W. Killam's Cuellar 47-B, Cuellar pool, sur 277, abn 2430 ft; A. Bustamante 13, Blk 11, Share 5, Fansler Partition, Comitas Grant, Escobas field, sand 1454-64 ft, 6⅝ in csg set 1454 ft, completed 150 bbls; Bustamante 14, Blk 11, Share 5, Comitas Grant, Escobas field, to make lcn; Bustamante 17, Share 5, Fansler Partition, Comitas Grant, sand 1305-10 ft, show oil and sw, 6⅝ inch csg 1305 ft, completed 10 bbls; Bustamante 18, Share 5, ru; Medina (S. Bustamante) 2, Share 34, Comitas Grant, Escobas pool, sand 1460-70 ft, set 6⅝ inch csg 1460 ft, completed 150 bbls; Medina (S. Bustamante) 3, Share 34, Fansler Partition, Comitas Grant, Escobas field, ru. Pray and Chamberlain Prod. Co., Inc.'s, (Whicker) Garza 1-C, (4), sub of Zorro Ranch, Comitas Grant, s extension Escobas pool, sand 1342-48 ft, 6⅝ inch csg set 1342 ft, completed 30 bbls. Trevino Oil Corp.'s Trevino 15-A, Escobas pool, Blk 13, Sur 412, dr 1200 ft. United North and South Dev. Co.'s Gutierrez 1, blk 325, S. M. Doty O&G Sub of Charco Redondo Grant, dr 450 ft. Winch and Billings' Bustamante 1, Share 35, Fansler Partition, Co-

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The OIL WEEKLY

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mitas Grant, Escobas pool, td 1320 ft, ru to deepen; Jose Bustamante 7, Share 35, Fansler Partition, Comitas Grant, Mucklroy pool, sand 1461-69 ft, 6⅝ inch csg at 1461 ft, completed 150 bbls.

EAST TEXAS

HARRISON COUNTY — Ryan Cons. Pet. Corp.'s J. M. Furrh 1, T. J. Copelain sur, rig. J. M. Gholson's Bivins 1, T. D. Peterson sur, sd 3085 ft. Lloyd Oil Corp.'s Timmons 1, Jno. Findley sur, 10-inch 240 ft, sd 4195 ft lime and anhydrites.

MARION COUNTY—Baunauch Dev. Co.'s Laun 1, Henry Fulgram sur, dr 1840 ft.

PANOLA COUNTY—United Prod. Corp.'s Werner 11, D. B. Lewis sur, 15½ cas 383 ft, 9-inch 3525 ft, top Washita 2190 ft, top anhydrites 4150 ft base, 4625 ft, tested dry 5782-5804 ft, cemtd back to 3650 ft, wo cement. Daisy O&G Co.'s Rucks Hrs. 1, Jno. Palmer sur, sd 3264 ft shale. Moses & Wallace's C. L. Daniels 1, Isabel Hanks sur, sd 650 ft. Hoffer et al's Cameron 1, W. A. Lagrone sur, dk. Davidson et al's Latham 1, Wm. Ritch sur, 10-inch 260 ft, sd 2055 ft chalk. Nelson et al's Williams 1, Jas. Hanks sur, 12½ cas 400 ft, sd 2920 ft, shale and chalk. Stamps et al, Chadwick 1, Wm. Scantleberry sur, rig.

SHELBY COUNTY—E. L. Chapman's Holt 2, Matthew Moore sur, 10-inch 103 ft, dr 2055 ft (second hole). McRobie et al's Windham 1, Wm. Leach sur, 296-ac tract, 12½ cas 276 ft, top PG 1930 ft, 8¼ cas 1750 ft, slight gas show 2282 ft, base chalk 2572 ft, dry slight oil show 2686-92 ft, 9 ft saturated core, 3360-69 ft, 6⅝ cas at 3366 ft, parted sd while trying pull it, td 3393 ft. Maulding et al's Frost Lbr. Ind. 1, A. B. Fountain sur, top PG 2900 ft, sd 3246 ft. H. H. Gracey's J. A. Morrison 1, Wm. English sur, sd 2600 ft. C. H. Tautenhahn's J. C. Bogard 1, Thos. Baker sur, sd 20 ft, partly rigged up. Ridgeway et al's Polley 1, Domingo Gonzales sur, 10-inch 112 ft, sd wo cas 822 ft. K. H. Francis' Jno. Mims 1, Mary Smith sur, top Midway 847 ft, 6⅝ cas 2817 ft, dr 3255 ft shale. United North & South Prod. Co.'s Windham 1, A. H. English sur, 171.5 ac tract, 12½ cas 376 ft, top PG 2004 ft, base 2602 ft, top AC 3198 ft, tested 17 joints mud and slight show oil, 3355-91 ft, top Georgetown lime 3369 ft, sd 3391 ft. Harry Elliott's Pickering 1, C. H. Patterson sur, 361-acre tract, 10-inch 108 ft, sd. Ray & Dunbar's Hayden 1, 153-ac tract, D. F. T. Yordt sur, dk.

OKLAHOMA

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros., Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, Sec. 9, Mummer et al, Sornick 1, nw c se, hfw 2070-2170 ft, sd 3693 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden, Vollmer 2, ne c se ne sw, lost tools, sd 5640 ft.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al, Acre 1, c sw ne, sd 5502 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer, White 1, se c nw, sd 5850 ft.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma Pet. Co., Phillips 1, c nw sw, sd 5120 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healey et al, Quier 1, se c sw, sd 3970 ft.

KAY COUNTY—T 28n, R 3e, Sec. 24, W. H. Atkinson et al, Hayes 1, se c ne, dr 1600 ft.

PAWNEE COUNTY—T 20n, R 5e, Sec. 6, W. A. Rookstool, Berry 1, nw c ne sw, sd 1951 ft.

LINCOLN COUNTY—T 17n, R 5e, Sec. 36, W. M. Mote et al, School land 1, nw c, sd 1160 ft. T 1rn R 3e, Sec. 2, Hilton Phillips et al, Phillips 1, sw c nw, td 4842 ft, trying to drill by at 3312 ft.

CREEK COUNTY—T 14n, R 7e, Sec. 18, Cal-Cul Oil Co., Holleyman 1, se ne se, fsg 520 ft.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al, McDuff 1, sw nw se, 5902 ft sd. T 7n, R 14e, Sec. 34, Tape Oil, Fulton 1, se c, sd 1200 ft.

LATIMER COUNTY—T 6n, R 19e, Sec. 16, P. English et al, Weaver 1, c nw se, sd 1542 ft.

ATOKA COUNTY—T 1n, R 13e, Sec. 31, T. J. Campbell et al, Baird 1, nw c ne sw, machine.

T 1n, R 15e, Sec. 6, Edgerton et al, Rolland 2, sw c ne sw, machine.

OKLAHOMA COUNTY—T 12n, R 4w, Sec. 17, C. F. Cuniff, St. Joseph 1, sw c ne sw se, sd 6700 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al, Bruner 1, se c nw, rig.

POTTAWATOMIE COUNTY—T 6n, R 4e, Sec. 2, Mid-Continent, Farmer 1, sw c nw, dr 4365 ft, 3500 ft water.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Ute Oil Co., Williams 1, c sw, sd 5150 ft. T 11n, R 26w, Sec. 4, J. J. Rook and Palmer, Davis 1, c nw ne (owd), sd 3240 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey, Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 8n, R 19w, Sec. 29, Cooper & Terhune, Blocker 1, nw c, sd 2757 ft. T 6n, R 18w, Sec. 21, Burns & Prince, Dock 1, sw c, sd 1106 ft.

GREER COUNTY—T 7n, R 22w, Sec. 1, Good & Dowell, Cliffell 1, nw c, sd 1745 ft. T 7n, R 21w, Sec. 23, H. A. French et al, Murphy 1, sw nw se, sd 1654 ft.

CADDO COUNTY—T 5n, R 9w, Sec. 6, Mid-Kansas and Ramsey, Culp 6, nw c ne, td 10,079 ft, bailed small show oil and gas, pb 8880 ft, shot 130 qts bailed no show; pb to 7291-7730 ft shot 100 qts, show gas; RUST & PB to 6750-80 ft shot 80 qts, C.O.

COMANCHE COUNTY—T 4n, R 12w, Sec. 33, Snodgrass et al, Willetts 1, ne c nw, sd 305 ft.

GARVIN COUNTY—T 2n, R 2w, Sec. 24, Malernee, Phillips 1, ne c sw, sd 4800 ft.

COAL COUNTY—T 1s, R 8e, Sec. 2, Rabial Oil, Richardson 1, ne c nw, sw 1450 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Quinn 1, nw c, sd 1540 ft.

LOVE COUNTY—T 6s, R 2e, Sec. 27, Batson, Stanitt & Autry, Cross 1, ne c nw ne, sd 1651 ft.

BRYAN COUNTY—T 7s, R 10e, Sec. 8, Bryan Oil Co., Childs 1, ne c se sw, sd 660 ft.

KANSAS

SUMNER COUNTY—Trees Oil Co. & Shell's Springate 1, ne se sw, 6-34-2e, sd 2565 ft. Spencer et al's Porter 1, ne sw, 12-23-4w, td 4515 ft, d&a.

KINGMAN COUNTY—Panhandle Drlg. Co.'s Wetherall 1, c se nw sw, 20-28-10w, ru and sd.

STAFFORD COUNTY — Rosenthal, Stanolind, Amerada's Gray 1, c ne, 11-34-13w, sd 3935 ft.

HARVEY COUNTY—Liggett et al's Davis 1, c sw se ne, 7-24-1e, sd 2500 ft.

FINNEY COUNTY — National Refg. Co.'s Wells 1, sw c 12-23-30w, td 3500 ft rng 8-in.

McPHERSON COUNTY—Twin Drlg. et al's Farver 1, sw se, 16-20-1w, dr 1835 ft.

BARTON COUNTY—Skelton Oil's Ott 1, c se se, 16-19-14w, sd 3375 ft.

RICE COUNTY—Gypsy's Steckel 1, c ne nw, 31-19-10w, spd.

McPHERSON COUNTY—Shell's Johnson 1, se sw sw, 35-19-3w, chat 2984 ft rebldg rig after fire.

RUSH COUNTY—Shelton, Schleagel's Brock-Hartman 1, sw se nw, 4-18-16w, spd and sd.

BARTON COUNTY—Syndicate Oil's Boertz 1, c nw se ne, 13-18-12w, 5-in. 3506 ft, sd 3523 ft.

MORRIS COUNTY—Allender et al's Wycoff 1, c sw se, 5-17-7e, sd 105 ft. Urschel et al's Bersuch 1, c nw se, nw, 10-17-7e, td 915 fsg bit.

ELLSWORTH COUNTY—Raymond Gear et al's Sauberli 1, c sw se, 29-16-9w, spd and sd.

MORRIS COUNTY—Hankenson et al's Cessnum 1, sw se, 24-17-9e, sd 2625 ft.

RUSSELL COUNTY — Tom Palmer et al's Pasek 1, c se, 3-14-11w, fsh 560 ft.

OSAGE COUNTY—Riggs-Smith's Wood 1, c se nw, 31-14-15e, 10-in. 1050 ft, sd.

RUSSELL COUNTY—James Brennan's Walz 1, cwl e½ nw, 29-13-11w, rig; Twin Mounds Oil's Weis 1, c w½ ne nw, 30-13-4w, (owd) td 2710 ft sd.

DICKINSON COUNTY—Severs et al's Livingood 1, ne sw, 13-13-2e, sd 4752 ft.

SHERIDAN COUNTY — Flo et al's Shoemaker 1, se sw sw, 27-27-26w, hfw 4040-45 td, fsg bit.

WASHINGTON COUNTY — Sincox's Penwell 1, nw se nw, 16-3-3e, sd 1720 ft.

RAWLINS COUNTY—Danciger et al's Unknown 1, sw c, 3-2-35w, 6-in 3875 ft; hfw 3925 ft sd.

SOUTHERN CALIFORNIA

CALABASAS—L. W. Rucker's No. 1, 26-1-17, co 700 ft, will deepen. Simi Oil Co.'s Hearst 2, 18-1-17, dr hard sand and limestone 4884 ft, may not drill deeper than 5000 ft.

COYOTE PASS—Davidson Oil Co.'s Fee 1, 32-1-12, lcn.

EL NIDO—Mohawk Pet. Co.'s Pavey 1, 29-3-14, dr 845 ft.

FULLERTON — Standard's Bastanchury 1, 23-1-10, pumping 125 bbls. 32 gravity oil from above plug at 5884 ft, td 8144 ft.

LYNWOOD—William L. Jones' Graham 1, 31-2-12, sd 300 ft.

MONTEBELLO — Wardell and Menichini's No. 1, 7-2-11, rigged to sp.

NEWPORT—Ajax Pet. Co.'s B. G. 1, 16-6-10, dr shale 6600 ft. Nuoil Co.'s Banning 2, 29-6-10, pumping 50 bbls, td 1975 ft. Orange County Refining Co.'s No. 5, re-cmt 8⅝-in cas 1300 ft, td 1825 ft.

OCEAN PARK—Hines Pet. Corp.'s Happy Days 1, 8-2-15, sd 7406 ft.

PLAYA DEL REY—Cooperative Pet. Co.'s No. 1, 26-2-15, rig.

WILMINGTON—Ranger Pet. Corp.'s Watson 2, 21-4-13, sd 3785 ft.

NORTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
SANTA BARBARA COUNTY—		
Texas' Core Hole 1, 34-4-25.....	*	450

KERN COUNTY

ANTELOPE VVALLEY—Meridian Oil Co.'s No. 1, 11-9-15, dr hard rock 4000 ft.

ANTELOPE VALLEY—Meridian Oil Co.'s Co.'s Carmel 1, 20-27-22, dr shale 5668 ft General Pet.'s Morris 1, co 2615 ft, will deepen. Milham Exploration Co.'s Crites 1, 8-28-23, shale heaving in hole, td 4496 ft, sd.

DEVIL'S DEN—Cumberland Oil Co.'s Cumberland 2, 17-26-18, dr gray sand 3035 ft.

EL TEJON—Descanso Oil Co.'s Tejon 1, 31-11-19, lcn.

McKITTRICK—T. H. Purman's No. 1, 22-29-21, dr shale 2200 ft. Welport Oil Co.'s No. 8, 26-29-21, dr hard sand 575 ft.

SEMITROPIC — Fullerton Oil Co.'s Core Hole B, 25-27-23, dr shale 2000 ft.

WEED PATCH—Osborn and Colter's Duff 2, 15-30-29, sd 2006 ft.

WHEELER RIDGE—Barnsdall Oil Co.'s K. C. L. 1, 15-11-20, dr shale 1600 ft.

SANTA BARBARA COUNTY

CARPENTERIA—Texas' Core Hole 2, 34-4-24, rigging to sp.

GOLETA—General Pet.'s Hollister 1, 3-4-29, lcn; More 3, 22-4-28, plugged to 5655 ft, perforating 4¾-in liner for further testing of gas zones.

LOS ALAMOS—Barnsdall's Careaga 1, 31-8-33, rig. N. S. Wilson's Midwest 1, 2-7-33, will deepen from 3450 ft.

SANTA MARIA—Western Gulf's Bradley 1, 8-9-33, fsh for core bit 8566 ft.

VENTURA COUNTY

HOPPER CANYON — Bardeen Oil Co.'s Lankershim 1, 13-4-19, placing on pump, flowed some on compressor, td 2430 ft; Lamkershim 2, rig.

OJAI—A. N. Macrate's Cosmon 1, 27-4-23, rig.

PIRU—Torrey-Ventura Oil Co.'s No. 1, 32-4-18, dr shale 835 ft.

RINCON—Continental's Grubb 1, flowing 200 bbls, td 6750 ft. Woodruff Oil Co.'s Lomas 1, 4-3-24, lcn.

SANTA PAULA—San Pedro-Pt. Fermin Oil Co.'s Kellerman 1, 13-4-21, co after flowing by heads, td 3850 ft.

SHIELLS CANYON—Union's Calumet 1, 3-3-19, lcn.

SOUTH MOUNTAIN—H. H. Bell's Lemon 1, 22-3-21, dr shale 1898 ft.

MISCELLANEOUS

FRESNO COUNTY—Kingsburg Exploration Co.'s Muller 1, 29-16-23, sd 2350 ft.

KINGS COUNTY—Knudsen and Schmidt's Avenal 1, 36-23-17, dr hard sand 4880 ft. Eagle Oil and Gas Co.'s No. 1, 15-23-20, will deepen from 555 ft. E. B. Guess' No. 2, 15-23-22, dr

shale 935 ft. Irma Investment Co.'s Watson 2, 7-23-20, will make production test 1224 ft. Valley Exploration Co.'s Dudley 1, 12-23-19, sd 1302 ft.

MONTEREY COUNTY—Pacific Inland Oil Co.'s No. 1A, 19-23-15, dr shale 2260 ft.

SAN JOAQUIN COUNTY—Union's No. 1, 14-3-6, dr shale 2700 ft.

SAN LUIS OBISPO COUNTY—Kent and McDonald's No. 1, 3-32-22, dr shale 2475 ft. J. D. Martin's Pricco 2A, 5-31-13, co and redr 3000 ft.

STANISLAUS COUNTY—Bud Hildebrandt's No. 1, 36-6-7, dr shale 925 ft.

TULARE COUNTY—Gravity Exploration Co.'s Hudson-Buck 1, 11-24-23, rig. Ellis and Sanford's No. 1, 20-24-23, co 1920 ft. E. B. Guess' No. 1, 7-21-21, re-dr 6197 ft. Tulaco Oil Co.'s No. 1, 17-22-22, rig. W. A. Campbell's No. 2, 22-22-27, rigged to sp. C. E. Pettingill's Dunigan 1, 22-22-27, rigged to sp.

WYOMING

CARBON—Midwest Ref. Co., U. P. 27, 27-11-81, sd for winter. Prairie O&G Co., Bunker Hill 1, 29-27-87, sd for winter at 6147 ft.

CONVERSE—John Ackard, se 24-33-72, dr 1820 ft.

CROOK—Northwestern Oil & Natural Gas Co., 6-54-60, sd 1585 ft for winter.

FREMONT—Wiebolt et al, 35-33-99, dr 2175 ft. Ward O&G Co., 28-34-90, skd rig Yellowstone Oil Co., sw 14-38-94, dr 1000 ft last rept.

LINCOLN—Wyo. Prod. Co., 14-24-113, td 1700 ft.

NATRONA—Midwests 11, nw 32-34n-77, rigging to resume at 5340 ft. Summit Oil Co., 21-33-80, set cas 1387 ft. Wyo. Imperial Oil Co., se 13-33-79, rig up, mvg in materials.

NIOBRARA—Fall River Royalties & International O&R Co., Joint, Globe 1, 2-39-61, sd 600 ft.

WASHAKIE—Ohio Oil Co., lot 14, 19-45-92, recem liner at 7475 ft to test second Frontier. Bales Oil Trust, nw 31-48-80, sd for winter at 1100 ft.

WESTON—LeFaivre Oil Synd., se 29-45n-68w, stand at 1800 ft. Julius Peters et al, Weitzell 1, se nw 30-46-64, co at 3400 ft to dr 100 ft deeper. Stockade Anticline Synd., 32-45-60, sd. Gose Oil Synd., Gose 1, 28-47-65, sd 5050 ft.

COLORADO

ADAMS—Hills Dome Lease Dev. Co., se 27-3s-64w, sd 3790 ft.

ARAPAHOE—McDeb Dr. Co., Fitzsimmons 1, ne 7-4s-66w, dr out plug at 5850 ft.

BOULDER—Julius Williams, Degee 1, 6-1n-71, dr 942 ft. Ahlstrand et al, Woodley 1, nw 8-3n-70w, dr 555 ft last report.

ELBERT—Belmont Oil Co., sw 27-3n-64w, sd 3745 ft to standardize. Progressive O&L Co., Pease 1, se 27-10s-66, dr 3815 ft last report.

EL PASO—Gulf States Oil Corp., Carson 2, ne 10-16-66, sd 1125 ft.

GRAND—Oil Mineral Lands, Inc., McElroy 1, sw 14-2-81w, stand 545 ft.

JEFFERSON—Ruby Hill O&G Co., Braden 1, se 34-4s-69w, sd 4050 ft.

LaPLATA—McGarr Pet. Co., Pinon Mesa 1, ne 34-33-12, rig up. Klem Pet. Corp., Olbert 1, sw 9-35-12w, stand 3125 ft. J. W. Irwin & Co., Doescher 1, nw 29-33n-13w, sd 3175 ft. Phipps et al, sw 9-33-13, dr 520 ft last report.

LARIMER—Mayer et al, Reed 1, nw 28-4n-69, dr bel 2500 ft. W. Mosher et al, Foster 1, se 17-4n-69w, sd 1268 ft. Raddatz-Travis Corp., Fagan 2, ne 17-4n-69w, abd 3882 ft. Colo. Prod. Inc., Foster-Motz 1, se se 17-4-69, prep to run 6¼-in, td 1435 ft. Colo. Producers, Inc., Hogsett 1, se ne 21-3-61, to test at 700 ft. C. Leonard Smiths State 1, 36-12n-70, dr 760 ft. Poudre River Oil Co., se nw 34-8n-69, run 8⅛-in 1995 ft. Consolidated Dr. Co., Maxwell 1-A, ne 25-8n-70, to res at 285 ft. Nat'l Gas & Oil Co., Meade 1, se 17-4n-69, rigging to deepen from 785 ft.

LINCOLN—Eastern Colo. Oil Corp., State 1, 36-14n-57w, fsg tools, td 3449 ft.

MOFFAT—Ohio Oil Co., Bogenschultz 1, se 9-6n-91, dr 1250 ft.

MORGAN—Badger Creek O&G Co., sw 2-2-57, stand 1340 ft. Colo. Ass'd Oil Co., Pumphrey 1, se 14-5n-59, plug to abnd, td 6176 ft. Tulsa-Ft. Morgan Oil Co., Smith 1, nw 18-6n-60w, location. Prairie O&G Co., Mortier 1, nw 2-5n-60w, to abnd in Muddy 6490 ft. Myers et al, Lee & Lusby 1, sw 6-2n-56w, cellar.

PARK—South Park O&G Co., Milligan 1, se 13-8s-76w, show oil in Dakota 2631 ft. South Park O&G Co., Esche 1, ne 5-9s-76w, sd 2470 ft.

PUEBLO—Anchor Oil Co., Esely 1, sw 35-22-67, sd 820 ft.

RIO BLANCO—California Co., Raven 1, se 20-2n-102, dr 3439 ft. Magnolia Pet. Co., Maddock 1, se 9-2s-96w, cem 10-in at 2298 ft.

ROUTT—Mid-Colo. Pet. Corp., Omholt 1, se 29-4n-87, sd 1700 ft.

WASHINGTON—Middlemist Oil Co., Middlemist 1, se 14-4-56, stand with 12½-in set at 1503 ft.

WELD—Reiter-Foster, Johnson-Juhl 1, 14-6n-61w, to abnd at 6918 ft. Reiter-Foster, Wilson 1, se 24-6n-61w, sd 430 ft. Retter Oil Co., Smith 1, 14-1n-68w, stand 1377 ft. Conoco, Gadbois 1, sw 24-6n-61w, dr 6595 ft. Greeley Oil Co., Gadbois 1-B, nw 25-6n-61w, co and test, td 6698 ft. Gulf States Oil Corp., Bengston 1, nw 6-4n-63, location. Prairie O&G Corp., O'Toole 1, ne 33-7n-62w, sd 7260 ft to clean boilers. Ft. Morgan Oil Co.'s Smith 1, nw 18-6n-60, location.

NEW MEXICO

BERNALILLO — Norrins Realty, Pajarito Grant 1, 22-9n-2e, dr 1200 ft in conglomerate.

CHAVES—Warman Oil Trust, Evans 1, 15-14s-25e, resum 680 ft.

DeBACA—Matador Oil Co., Wood 1, ne 6-4n-20e, sd for repairs at 3305 ft. Landowners Oil Co., State 1, ne 16-1s-27e, sd 4660 ft.

DONA ANA—Viking O &Dev Co. 1, nw 26-23-5e, operation suspended, td 3215 ft.

GUADALUPE—N. M. Prod. & Ref. Co., McMillan 1, 24-5n-16e, dr 3875 ft.

LUNA—Angelus O&M Co., State 3, se 20-21-10, try to cem at 4275 ft, td 6155 ft.

OTERO—Ernest et al, se 20-25s-7e, stand 1445 ft. Pastolero Oil Corp., Evans 1, sw 32-5s-30, rig

RIO ARRIBA—Berrenger et al, Hartman 1, ne 8-29n-7w, sd 825 ft. Governador Oil Co., 1, 15-29n-7w, dr 1945 ft, carry 5 3/16-in at 1900 ft.

ROOSEVELT—Peterson et al, Good 1, 32-5s-30e, rig up.

SAN JUAN—Kutz Canon O&G Co., Day 1, se 20-28n-10w, sd 3742 ft. Rio Grande Dev. Co., 2, 9-26-11, sd 1771 ft. Continental Oil Co., Rattlesnake 24, 1-29n-19w, co 5450 ft, td 6066 ft, bail water at 4100 ft. San Juan Leaseholds, Bowman 3, nw 30-30-15, sd 2685 ft. R. Ortega et al, nw 34-30-16w, compl. Wms. et al, Stallings 1, sw 17-25n-15w, stand 150 ft. Dorothy Oil Co., Termilliger 2, se 29-30-9, suspended indefinitely, td 1750 ft.

SANTA FE—Jones, Owsley et al 5-10n-9e, sd 435 ft. N. M. Securities Co., sw 6-10n-7e, sd 480 ft.

SAN MIGUEL—Starr Oil Co., Adams 1, ne 25-17n-16e, fsg pipe 5095 ft. Hershfield Dev. Co., Cabra Springs 1, ne 21-12n-22e, recem. 12½-in, 1370 ft, td 1550 ft.

TORRANCE — Estancia Valley Carbon Dioxide Dev. Co., DeHart 2, se se 12-7n-7e, compl as gasser at 1210 ft. 140,000 cu. ft gauging 97.8 per cent carbon dioxide.

MONTANA

CARBON—Corbett Roy. Co., sw se 1-6s-23e, showing oil at 1100 ft. Jack Creek Oil & Gas Co., 1, se 15-7s-23e, td 1325 ft. Ohio Oil Co., Kutchinski 1, 15-7s-21e, rigging rotary, td 355 ft.

CARTER—E. T. Moorehead, sw 36-4s-57w, sd.

CASCADE—Buscher & Cassady, Johnson 1, se 19-22-3e, mvg in new boiler 1380 ft. Charles Merz et al, Sheffels 1, nw 4-21-4e, set 8-in at 742 ft.

FERGUS—Melton Corp., 1, sw 24-21n-17e, dr 3100 ft last report. Landheim-Romunstad 2, ne 3-17n-20e, set 6⅝-in at 2116 ft, sd 2600 ft.

GALLATIN—Mont. Gas & Pet. Corp., Adams 1, 35-1n-2e, stand 527 ft. Gallatin Valley Oil Co., Haglund 1, sw 13-34-6w, sd 2539 ft.

GLACIER—Fulton Blackfeet Oil Co., ne 28-36-12w, cem at 2850 ft.

GOLDEN VALLEY—Golden Valley Oil Co., 28-6n-22, dr 2800 ft.

LIBERTY—Northland O&G Corp., Yurman 1, sw 32-33-5e, dr 3785 ft. California Co., Ross 1, ne 3-33-6e, run cas to 2212 ft.

MUSSELSHELL—Minn-Flatwillow Pet. Co., 1, sw 7-11-31e, to res, td 2556 ft.

SWEETGRASS—Shoshone Cons., nw 23-2n-15e, straight reaming around 5500 ft, last report.

TETON—California Co., Sullivan 1, nw 34-28-7w, ream 8-inch td 2810 ft. Earl Oil Corp., Gad 1, se 22-22-8w, dr 3820 ft.

TOOLE—Oregon Synd., se 20-36-2e, ur 2268 ft. Western Nat'l Gas Co., nw ne 26-37-4e, run 6-in to bottom, will tube and test, td 1813 ft.

YELLOWSTONE—Pan-American Oil Synd., 23-2s-24e, below 2360 ft last report. Peter Antonioli, ne ne 21-2n-25e, td 2150 ft.

LOUISIANA GULF COAST

Drelling Report

ACADIA PARISH — Yount Lee Oil Co.'s Housierre Latrielle 10, Evangeline dist, 47-9s-2w, dr 8355 ft, sh.

CALCASIEU PARISH — Wilfred Lahay's Jardell 1, 2 mi ne Vinton, 25-10s-12w, sd in gbo and li at 3900 ft. Union Sulphur Co.'s Fee 722, cor 4980 ft.

CAMERON PARISH—Pure Oil Co.'s Yount Lee 5, Sweet Lake, shwg o at 7456, r to set cas. Calcasieu Oil Co.'s Watkins 23 (wo), sd at 2845 ft; Watkins 31, E. Hackberry, td 3135 ft, pulled scr and dpnd, swbg salt w and little o. The Texas Co.'s State 8, E. Hackberry, dr sh and gbo 300 ft.

EVANGELINE PARISH—Emile Ledeau et al's J. E. Vidrine 1, 47-3s-2e, ru and sd.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 26, Jefferson Island, dr limestone and calc, 671 ft.

IBERVILLE PARISH—Standard Oil Co. of La.'s Myrtle-Grove-Wilbert 2, Bayou Choctaw Dome, set 13⅜ cas at 64 ft; Gay 2, Bayou Choctaw, dr 3918 ft; Schwing-Wilbert 7, Bayou Blue, dr 2047 bgo.

LA FOURCHE PARISH—States Prod. Co.'s Dibert-Starck-Brown B, Chacahoula Dome, set cas at 1117 ft.. Dibert-Starck-Brown C, lcn 210 s and 140 e of nw cor sec. 71-15s-15e.

PLAQUEMINE PARISH—Humble O & Ref Co.'s Cockrell-Moran 7, Lake Grande Ecaille dist, dredg. canal and driv piling.

POINTE COUPE PARISH—Grande Bay Oil Co.'s J. H. Moinott 1, Grand Bay, sd below 650 ft.

TERREBONNE PARISH—The Texas Co.'s State 5, Dog Lake, lcn 2270 s and 450 e of nw cor sec 5-22s-16e; State 6, lcn 3230 w and 980 n of se cor sec 31-31s-16e; Lake Barre 12, Lake Barre, bracing piling; L. L. E. Lake Barre 1, Lake Barre, Oil Sn. 3700-3720 ft; L. L. E. Lake Barre 2, lcn 3475 ft s and 530 ft e of nw cor sec 30-21s-20e; L. L. E. Lake Barre 3, lcn 4015 ft s and 230 ft e nw cor sec 30-21s-20e; State Lake Pelton 5; Lake Pelto, dr 1300 ft. United Gas Pub. Serv. Co.'s Minor Est 2, 4040 ft sn.

VERMILION PARISH—Pure Oil Co.'s Alliance Tr. Co. 1, Gueydan dist, dr 870 ft sn rk.

WEST FELICIANA PARISH—Como Oil & Dev. Co.'s M. B. Woods 2, dr sndy sh 2800 ft.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
D. L. Perkins et al, Ardis 1, 13-15-11	*	1004
RED RIVER PARISH—		
Mack Jourdan Co., Lockett 1, 32-13-10	10	2750
NATCHITOCHES PARISH—		
Illini Prod. Co., Brown 1, 34-11-10	*	2590
SABINE PARISH—		
Ohio Oil Co., Bowman-Hicks 13, 35-8-12	25	2514
Crescent Drilling Co., McCormick 1, 2-7-11	*	2545
M. J. Kissick, Brown 1, 1-7-11	*	2720
Lyons & Neely, Clanan 1, 14-7-11	65	2539
W. F. Lacey, Paris 1, 2-7-13	*	2575
Smitherman & Grigsby, Martinez 1, 2-7-13	*	2520
Gerhig Co., W. F. Skinner 1, 16-8-11	*	2862

BOSSIER PARISH—H. I. Morgan's Smith 1, 22-19-11, 10-in 80 ft, tested est 20-25 mil ft gas in ds test 1758-70 ft, cemtd 6-inch 1758 ft, td 1770 ft. Plain Dealing O&G Co.'s Nattin 1, 15-22-14, 4½ cas 2882 ft, 150 ft oil in hole wosr, td 2890 ft. Dr. Hankins et al's Newell 1, 12-19-11, sd 1730 ft. D. L. Perkins et al's Ardis 1, 13-15-11, top Nacatosh 944 ft, sw abn, td 1004 ft.

CADDO PARISH—Pelican Nat. Gas Co.'s Cooper 1, 29-18-14, ta 3648 ft, red shale and lime. Louanna O&G Co., Inc.'s, Hammock 1, se se 32-19-16, rig.

CALDWELL PARISH—Monroe Pet. Corp.'s

Burton 1, 36-12-2e, sd acct titles, td 2986 ft. Carter Bell et al's Taylor 1, 17-14-4e, 12½ cas 110 ft sd.

DE SOTO PARISH—A. R. Smith's Horn 1, nw se 15-12-16, sp and sd. Rellitt O&G Co.'s Cannon Hrs. 1, 12-11-16, sd 1965 ft. E. T. Oakes' Johnson 1, 30-13-15, sd 3038 ft lime. Walters & Nicholson's Jim Guy 1, 3-11-13, sd 1260 ft.

NATCHITOCHES PARISH — Illini Prod. Co.'s Brown 1, ne se 34-11-10, 10-inch 40 ft, 6-inch 1908 ft, base chalk 1957 ft, gas show top Ozan 1958 ft, dry and abn, td 2590 ft. C. M. Talley et al's Talley 1, 29-11-10, sd 1380 ft. J. W. Cooper et al's Cooper 2-A, 35-11-10, sd 1515 ft. Gerson et al's Smith Island 1, sw nw sw 11-10-8w, 12½ cas 90 ft gas and sw flow killed, arr skid over for new hole, td 585 ft sand. R. A. Keator's Stephens 1, 25-10-6w, 12½ cas 178 ft sd.

OUACHITA PARISH—S. C. Wilson et al's W. L. Williams 1, sw se 5-16-1e, 12½ cas 180 ft, dr 1800 ft shale.

RED RIVER PARISH—Mack Jourdan Co.'s Lockett 1, 32-13-10, 6-inch 2350 ft, pumping 10 bbls oil daily, td 2750 ft.

RICHLAND PARISH—National Gas Co.'s Singletary 1, 20-18-7e, sd 2515 ft.

SABINE PARISH—J. J. Kean's Belton 1, nw se ne 31-9-13, 8-inch cas 1590 ft, top chalk, oil show at 1600 ft, gas show 1617 ft, oil show 2039 ft, bailed dry show oil 2084-99 ft, base chalk 2115 ft, dr, sd repr rig, td 2705 ft lime and shale. H. W. Perritt's Bowman-Hicks 6, se ne 2-7-12, 10-inch 100 ft, wosr 2317 ft, pumping est 30 bbls oil day, wo gauge, td 2317 ft. R. L. Gay, Tr.'s, Long-Bell A-1, nw nw 10-8-13, top Glen Rose 4220 ft, dr 4411 ft. Coats Pet. Co.'s Bowman-Hicks 1, ne sw 2-7-12, oil show in Wilcox show in Wilcox 1670 ft, wosr 2441 ft; Stille 1, nw se 35-8-13, lcn; Hill 1, se se 35-8-13, lcn; Parie 1, ne se 2-7-13, 10-inch 100 ft, dr 1800 ft. Ohio Oil Co.'s Bowman Hicks 9, 35-8-12, lcn; Bowman-Hicks 10, 35-8-12, lcn; Bowman-Hicks 11, se nw 2-7-12, 10-inch 184 ft, 6⅝ 2279 ft, dr 2455 ft hd chalk; Bowman-Hicks 13, ne se 35-8-12, pumping 25 bbls oil day, td 2514 ft chalk. Hudson & Bird's Walden 1, sw ne 26-8-11, elev 290 ft, 10-inch 100 ft, top marl 2355 ft, t op bro chalk 2440 ft sd 2454 ft chalk. Gerhig Co.'s W. F. Skinner 1, nw nw 16-8-11, elev 290 ft (est.), 6-inch 2230 ft, at top marl, dry gas show 2302 ft, base chalk 2780 ft, dry abn, td 2862 ft. Hawkins & Atnoon's Newton 1, 1-7-11, wosr 2610 ft. Baird Bros.' Bush 1, 1-7-11, 6-inch 2402 ft, blg to test, 700 ft oil in hole, td 2493 ft. Zeke Lohman's McCormick 1, ne sw 2-7-11, sd 1606 ft. Ben Merritt, Tr.'s, Byrd 2, 1-7-11, 10-inch 88 ft, 6-inch 2412 ft, sd 2480 ft. Roy Baker's Sabine 1, 11-7-12, wosr 2548 ft. Gautier et al's Meshell 1, 30-8-12, dr to 2599 ft with cable tools, sd 2599 ft. Loring Oil Co.'s Bowman-Hicks 18, sw nw 15-7-12, elev 264.1 ft, 15½ cas 100 ft, 9¾ cas 3950 ft, top lower Cretaceous 4000 ft, top marl 2482 ft, top chalk 2537 ft, tested est. 1 mil ft gas through ds 4390 ft, pumped in 175 sacks cement to shut off sw sand 4300-34 ft, mixing mud and cemt to shut off sw, td 4428 ft; Bowman-Hicks 20, nw nw 4-7-12, sp 10-inch 101 ft, dr 400 ft. G. M. LeGrand's Petersen 1, sw ne 34-7-13, 10-inch 40 ft, sd 2243 ft; McGough 1, 3-8,10, dk. A. F. Tarver's Cutrer 2, 12-7-11, 10-inch 100 ft, 6⅝ cas 2378 ft, wosr 2550 ft. Lyons & Neely's Clanan 1, se nw 14-7-11, 10-inch 100 ft, 6-inch 2402 ft, flowing 65 bbls oil day through 2-inch tub, td 2539 ft marl. O. J. Baird's Duggan 1, se nw se 14-7-11, 6-inch 2410 ft, dry wo, td 2545 ft. Smitherman & Grigsby's Martinez 1, nw se 2-7-13, 10-inch 100 ft, 6-inch 2037 ft at top marl, dry abn td 2520 ft chalk. M. J. Kissick's Brown 1, nw ne 1-7-11, 6-inch 2400 ft, dry abn, td 2720 ft chalk. W. F. Lacey's Parie 1, sw se 2-7-13, 10-inch 100 ft, 6-inch 2062 ft, sw abn, td 2575 ft; McNeely 1, ne ne 14-7-11, dk. Crescent Drilling Co.'s McCormick 2, ne se 2-7-11, 10-inch 100 ft, 6-inch 2370 ft, dry abn, td 2545 ft; Byrd 1, nw ne 12-7-11, rig. Pelican Nat. Gas Co.'s Buckley 1, sw sw 6-7-10, sp 10-inch 100 ft, dr 200 ft; 4 L 11, ne nw 10-7-11, 6-inch 2335 ft, 1500 ft oil in hole, wosr 2500 ft. W. W. Smith et al's Hale 1, ne nw sw 1-7-13, 10-inch 103 ft, 6-inch 2037 ft, gas blowout 2054 ft, did not deepen, wosr 2055 ft. Beene et al's Ezernack 1, sw ne ne 2-7-13, sd 1000 ft. Abney & Davidson's F. Martinez 1, ne nw 11-7-13, rig. Ruston Drilling Co.'s McGehee 1, sw sw 28-8-12, sp 10-inch 100 ft, dr 1500 ft. Rush & French's Martinez 1, ne nw nw 11-7-13, sp 10-inch 100 ft, dr 1500 ft. Farrell et al's Haley 1, 6-7-12, rig. Lionel Hawkins' Byrd 1, se nw 1-7-11, dk. C. H. Tuttle's Byrd 1, nw nw 7-7-10, rig. Service Royalty Co.'s Byrd 1, sw nw 7-7-10, dk; Gardner B-1, sw sw 7-7-10, rig. J. E. Smitherman's Smith 1, sw nw 7-7-10, lcn. Baird & Stone's McNeely 1, 14-7-11, dk. Eddie Self's Jacobs 3, se se 1-7-11, dk.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12e, sd 3545 ft. Stovall Drilling Co.'s Miller 1, ne sw 10-10-10e, lcn.

ARKANSAS

CLAY COUNTY—S. C. Jeffus, Tr.'s, Underwood 1, 4-20-8e, sd 1260 ft.

CLEBURNE COUNTY—Frank S. Craver's Donithan Lbr. Co. 1, 33-11-9, sd 3740 ft.

CLEVELAND COUNTY—Crum & Stillwell's Bell 1, 10-10s-12w, rigged up and sd.

COLUMBIA COUNTY—Kendall Oil Co.'s Fullenwider & Kitchen 1, ne ne 13-17-22, sd 814 ft.

DALLAS COUNTY—Zepp O&G Co.'s Hillman 3, nw ne 20-10-13, lcn. Jno. James, Tr.'s, Fordyce Lbr. Co. 1, 11-9s-15w, sd 2520 ft.

DREW COUNTY—Cooperative Dev. Co.'s Ogles 1, ne nw 35-15-5, sd 1890 ft.

HOT SPRINGS COUNTY—Starr Oil Co.'s Cunningham 1, 11-5-16, 12½ cas 62 ft, sd 1262 ft shale and bldrs.

LINCOLN COUNTY—L. B. Cook, Tr.'s, McGehee Pltg. Co. 1, 5-8s-7w, sd 2800 ft.

LITTLE RIVER COUNTY—Geo. Stephens et al's Dierks Lbr. Co. 1, ne nw 19-12s-31w, 10-in 21 ft, top anhydrites 2217 ft, dr anhydrites 2285 ft. Fay Roberts Oil Co.'s Russell 1, 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26, sd 3610 ft.

MILLER COUNTY — W. E. Noel et al's Dickson 1, 11-20-27, sd 1955 ft, shale and gum-

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bo. Fitzwater et al's E. L. Beck 1, sw se 33-15-26, sd 2220 ft.

OUACHITA COUNTY—W. H. Copenhaver et al's Berg 1, se se 13-15-17, 10-inch 42 ft, sd 2011 ft.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, ta 2920 ft. Kentucky-Ark. O&G Co., Inc.'s East 1, 13-9-23, 10-inch 288 ft, sd 709 ft.

PRAIRIE COUNTY—Powell Creek O&G Co.'s Kloss 1, ne nw 3-4n-6w, partly rigged up and sd.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, sd 1536 ft. Waldron O&G Co.'s J. G. White 1, 17-3n-29w, sd 1860 ft (sec. hole).

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, sd 1536 ft.

SEVIER COUNTY—Tri-State O&G Co.'s Bank of DeQueen 1, 34-8s-32w, sd 950 ft.

UNION COUNTY — Southern Prod. Co.'s Wingfield 1, 16-19-15, sd 2608 ft. Lion O&R Co. et al's Guy P. Hayes A-9, ne ne 4-16-15, elev 96 ft, sd acct high water while trying recover hung ds, td 7255 ft salt. Drillers O&D Co.'s Pickering 1, 1-17-16, 6⅝ cas 2128 ft, plugged back to 2134 ft, to shut off sw, td 2160 ft. Modisette et al's Union Sawmill 1, sw nw 13-18-13, 10-inch 167 ft, top sand 2266 ft, tested sw slight oil show through ds 2266-80 ft, sd 2280 ft. Hill et al's Barnes 1, ne ne 21-19-15, dk pat.

WASHINGTON COUNTY—C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-12, ta 5640 ft.

MISSISSIPPI

Company, Well and Location	Initial Production Bbls.	Depth
CLARKE COUNTY—		
Gulf Ref. Co., Long-Bell Lbr. Co. A-1, 10-2n-16e	†	4775
RANKIN COUNTY—		
Gulf Ref. Co., Hanna A-1, 23-5-1e	†	3887

CLARKE COUNTY (Quitman Dist.)—Gulf Ref. Co.'s Long-Bell Lbr. Co. A1, sw sw 10-2n-16e, elev 380.3 ft, 15½ cas 105 ft, 10-inch 956 ft, top black shale 2290 ft, top chalk 2633 ft, top Eutaw 3673 ft, 7-inch OD cas 3685 ft, top Tuscaloosa 4115 ft, junked abn, td 4775 ft red gumbo, due 21 joints hung drill pipe, bit and collar.

CHICKASAW COUNTY—Hightower & Golson's Fleming 1, 20-13n-3e, ta 1640 ft.

HINDS COUNTY (Edwards Dist.)—Miss.-Minn. Oil Co.'s Edwards Land Co. 1, sw ne 23-6-4w, dk and wo rig.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet. Inc.'s, J. H. Keyes 1, nw ne 21-2n-10e, sd 2951 ft Wilcox.

LAMAR COUNTY (Purvis Dist.)—Stauffer & Kouri, Trs.', Bond 1, se ne 18-2n-14w, dk.

LOWNDES COUNTY — Lowndes County O&G Co.'s Carr Est. 1, 34-17-16e, rig.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, 2-15-19, ta 3007 ft brown sand. P. J. McAlpine's Cowart 1, 2-12s-19w, 5 3/16 cas 3420 ft, ta 3793 ft brown sandy lime.

NEWTON COUNTY (Newton Dist.)—Dalton Dev. Co.'s Majure 1, se se 25-6n-11e, 10-in 295 ft, sd 1420 ft.

NOXUBEE COUNTY (Macon Dist.)—Thompson O&G Synd.'s Donahue 1, se ne 25-16n-17e, elev 280 ft, 12½ cas 20 ft, 8¼ cas 1605 ft, hf alkali water, sd 1735 ft; Ames 1, nw nw 24-16-18e, dk pat.

RANKIN COUNTY (Jackson Dist.)—Gulf Ref. Co.'s Hanna A-1, nw se 23-5-1e, elev 265 ft, 9-inch cas 2565 ft, top black shale 2480 ft, top chalk 2565 ft, base chalk 2934 ft, junked abn, td 3887 ft sandy lime, junked with 45 jnts dr pipe and bit in hole. Atkisson & Dyer's Valentour 1, nw nw 18-5-2e, elev 270 ft, sd wo cas 2428 ft. Majestic O&G Co.'s Elton Lbr. Co. 1, 10-4n-3e, dk.

SCOTT COUNTY—Culley et al's Owen 1, 2-8n-9e, dk.

WARREN COUNTY (Vicksburg Dist.)—Eagle Lake O&G Co.'s Kiger 1, sw ne 9-18-2e, sd 2607 ft.

WEBSTER COUNTY — P. J. McAlpine's Henley 1, se nw 15-21-11e, cored gravel, sd 1800 ft.

ALABAMA

MADISON COUNTY—Tennessee Valley O&G Co.'s Fee 4, 1-4s-2e, no report.

SUMTER COUNTY (Livingston Dist.)—Forked Lightning O&G Co.'s Nixon 1, 30-20-2w, dk.

WASHINGTON COUNTY—Hobson et al's Hobson Bros. 1, 9-8-2w, ta 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, ta 700 ft.

TENNESSEE

CHESTER COUNTY—Gilmore et al's Scott 1, arr set 10-inch cas 562 ft sand (cable tool job).

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, sd 2511 ft (contract depth 2500 ft).

▼ PERMITS ▼

(Continued from page 62)

SMITH COUNTY—J. F. Graham, Wichita, Kan., T. O. Wright, 8, 2, J. Vargas sur, 150 ft from n and 818 ft from e line. Sinclair Oil & Gas Co., Fort Worth, A. Wiley, 312, 2, Jas. Jordan sur, 150 ft from s and w lines.

SHACKLEFORD COUNTY—J. E. Heck et al, Eastland, W. J. Dodson, 40, 1, S 16, Blind Asy. sur, 150 ft from n and w lines. A. B. Bissey, Albany, M. Huber, 80, 1, 531, TE&L sur, 750 ft from nw and ne lines. O. C. Pratt, Mineral Wells, Clarke, 40, 8, S 2, Blind Asy. sur, 450 ft from n and 567 ft from e line.

STARR COUNTY—Los Olmos Oil & Gas Co., Harlingen, Kelsey-Bass, 7, Sec. 7, 300 ft e of No. 4; 8, 150 ft from n and 450 ft from e line ne¼ nw¼.

UPSHUR COUNTY—Meaders & Steen Dr. Co., Inc., Tyler, J. F. Phillips, 96, 1, J. M. Pineda sur, 330 ft from s and e lines; 2, 660 ft w of No. 1. Fleethorn Oil Corp., Tyler, J. K. Edwards, 106, 3, D. Ferguson sur, 330 ft from n and w lines. Pilot Oil Co., Dallas, J. W. Ray, 117, 1, A. H. Woods sur, 990 ft from w and 1050 ft from n line.

VAN ZANDT COUNTY—Pure Oil Co., Fort Worth, R. V. White, 25, 2, J. Walling sur, 250 ft from e and 200 ft from s line; W. H. Cook, 31, 4, M. Gross sur, 225 ft from n and 604 ft from e line; M. F. Shirley, 38, 6, J. Walling sur, 150 ft from n and e lines; R. H. Peters, 70, 4, Nacadoches C.S.L. sur, 200 ft from n and 670 ft from e line. Humble Oil & Refg. Co., Houston, A. J. Fowler, 95, 4, Wm. Daniel sur, 200 ft from e and 1200 ft from s line.

WHARTON COUNTY — Ferdinand Heine, Houston, W. J. Woytek, 20, 16, S. F. Austin sur, 330 ft from e and 450 ft from s line.

WICHITA COUNTY—F. C. Baldwin et al, Fort Worth, H. A. Overall, 50, 3, DL&C sur, 450 ft from n and w lines.

WARD COUNTY — Bentley & O'Quinn, Grandfalls, A. D. Cummings, 6, B1, S 11, B 5, H&TC sur, center of Blk. 19.

YOUNG COUNTY—O. Bratcher et al, Loving, C. L. Lowe, 36, 1, 3412 TE&L sur, 200 ft from n and w lines. Terrell & Willis, Newcastle, J. H. Choat, 60, 1, 254 TE&L sur, 150 ft from s and e lines. J. H. Cavin, Wichita Falls, E. Hill, 63, 1, 195 TE&L sur, 150 ft from n and e lines. J. P. Coleman, Wichita Falls, Truehart, 320, 1, 612 TE&L sur, 150 ft from s and w lines of NE¼. J. B. Ewing, Hobbs, N. M., Jeffery, 80, 1, 54 TE&L sur, 150 ft from e and 750 ft from s line. Hickman, Hicks & Flack, Caddo, J. B. Clark, 80, 1, 1416 TE&L sur, 150 ft from n and e line sec. King Royalty Co., Wichita Falls, J. F. Larimore, 160, 35, 2246 TE&L sur, 150 ft from n and 450 ft from w line. F. Lewis, Graham, W. G. Herring, 60, 1, 168 TE&L sur, 150 ft from n and w lines.

▼ LETTERS ▼

Just want you to know that we are enjoying your articles that appear monthly, summarizing and commenting on supply and demand of petroleum and its products.

However, we cannot help but comment on and criticize THE OIL WEEKLY for January 8, 1932, particularly that chart which appears on page 13. When you compare November, 1931, activities with November, 1930, why does the proof reader not correct your 100 per cent line? It reads October, 1930. And why is it that you show the price of Mid-Continent crude oil for November, 1931, to be about 30 per cent above the price that obtained in November, 1930?

WARREN A. SINSHEIMER,
Henry L. Doherty & Company,
New York.

The first error, in the barometer chart, was the proofreader's; the second error was a transposition of figures. The price of crude in November, 1930, was 95 cents a barrel; November, 1931, 77 cents. Instead of an increase of 30 per cent, the barometer should have shown a decline of 19 per cent under November, 1930.

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New Equipment for the Field

MACHINERY - TOOLS CATALOGS - BOOKS

▼ ▼ ▼

1. Threading Machine

OSTER MANUFACTURING COMPANY and WILLIAMS TOOL CORPORATION

Oster Manufacturing Company and Williams Tool Corporation, Cleveland, as a companion to the original "Tom Thumb" pipe and bolt machine, which was placed on the market last year, have announced the new rotary die head "Tom Thumb."

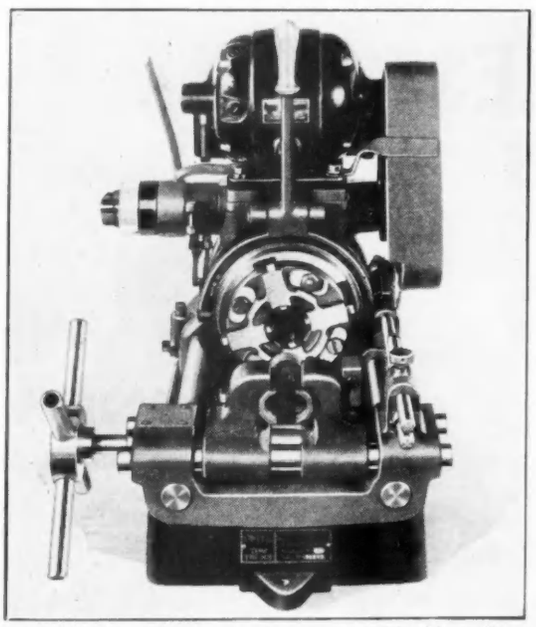
The regular pipe capacity of the new machine includes all sizes from one-half to 1¼ inch with a nextra capacity down to and including one-eighth inch. The regular bolt all sizes from one-half to 1¼ inch with an extra capacity of one-quarter inch, five-sixteenths inch, 1⅜ inch and 1½ inch. It can be furnished either as a bolt threader or with special equipment to handle nipples.

The manufacturers claim that the rotary die head and open type vise construction permit quicker handling and for that reason the machine is particularly well adapted to either pipe or bolt work.

Tests have been made which show that the new rotary head "Tom Thumb" machine will put a standard thread on 1¼ inch pipe in 18 seconds, and the actual floor to floor time, including chucking, threading, reaming and removing pipe from the machine requires only 30 seconds. On bolt work the total floor to floor time is approximately 40 seconds, for all sizes within the range.

The unusual compactness of the new "Tom Thumb" is indicated by the overall dimensions which are 24 inches high, 18 inches wide and 29 inches long. Its light weight makes it easily portable and it is ready for use the instant it is plugged into a light socket.

The machine is equipped with a stock-stop and an automatic trip which opens the die head when the thread has reached any desired length. A hand trip is also furnished.



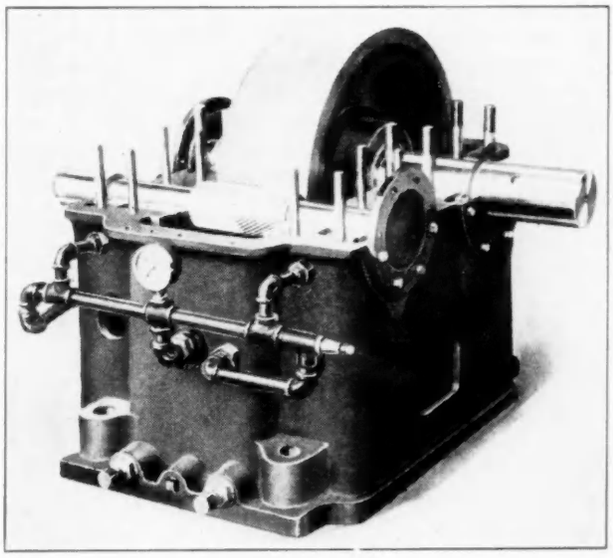
Oster No. 521 Tom Thumb Pipe and Bolt Machine, illustrating adjustable, quick-opening die-head and use of nipple jaws

Driving power is furnished by the one-half horse-power Domestic (Black and Decker) universal, reversible motor and is transmitted to the machine by means of the VV belt drive. The materials used in the construction of the machine are of the very best and Timken roller bearings are used.

2. High Speed Gear Units

FARREL-BIRMINGHAM COMPANY, INCORPORATED

Farrell-Birmingham Company, Incorporated, has developed and standardized a series of gear units suitable for speeds up to 6000 revolutions per minute and powers from 120 horsepower to 2500 horsepower, with gear ratios up to 10 to one for either increasing or reducing speed.



Farrel-Birmingham Gear Unit

This new series of gear units is especially adapted for connecting Diesel or gas engines to centrifugal pumps. The latter are designed to operate at speeds ranging from 1200 r.p.m. to 3600 r.p.m., and the larger engines usually operate at speeds from 225 r.p.m. to 600 r.p.m. The newly developed unit has a pair of herringbone gears with accurately generated continuous teeth.

Proportions of the gears, as regards number of teeth,

— — — — — — **MAIL COUPON** — — — — — —

THE OIL WEEKLY,
Houston, Texas, U. S. A.

Please see that I am supplied, without obligation, additional information on New Equipment Items Nos._____ described in the January 22, 1932, issue of THE OIL WEEKLY.

Name.....

Company.....

Address.....

pitch, face widths, diameters, depth of tooth, helical angle, proportions of addendum of pinion, addendum of wheel, are chosen with special consideration as to whether the gears are to be used for increasing or decreasing speed.

The manufacturers claim the mechanical efficiency of the gear units is from 98.3 to 98.9 per cent when used for reducing speed, and from 97.5 to 98 per cent when used for increasing speed.

Complete details on the high speed gear units may be obtained by writing Farrel-Birmingham Company, Incorporated, Ansonia, Connecticut.

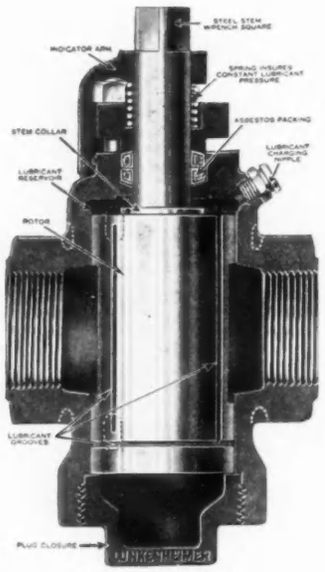
3. Lubricated Rotor Valve

THE LUNKENHEIMER COMPANY

The Lunkenheimer Company, Cincinnati, recently placed on the market a lubricated rotor valve which is simple in design and provides the advantages of self-lubrication, absolute sealing, and easy turning.

The new valve, called the "Slaset," is designed so that the lubricant is forced into the reservoir in the top of the rotor, pressure forcing the rotor down as the reservoir fills. The line pressure, aided by an external spring, causes the rotor to act as a booster plunger which forces the lubricant into pockets in the body and grooves in the rotor.

An indicator attached to the stem acts as a position open and closed stop and indicates the relative amount of lubricant in the reservoir.



"Slaset" Valve

The "Slaset" valve is a single acting valve made with screw ends for 150 pounds and flange ends for 125 pounds of gas or liquid pressure at 150°F.

Complete details concerning the "Slaset" valve may be obtained by writing Lunkenheimer Company, Cincinnati, Ohio.

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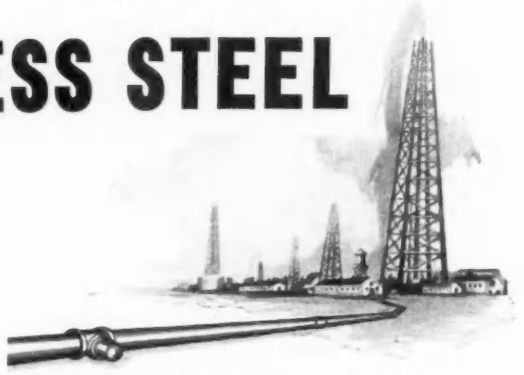

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525 Market St., San Francisco

MID-CONTINENT SUPPLY CO.,
Fort Worth, Texas

4. Small Motorpumps

INGERSOLL-RAND COMPANY

Ingersoll-Rand Company, 11 Broadway, New York City, announces a number of new sizes added to the Cameron line of small general service centrifugal motorpumps. These pumps are now made in one-inch discharge and upward.

Pump and motor are assembled as a single unit with a common shaft, producing a compact, lightweight pump which requires little floor space and can be easily installed. No foundation or baseplate is needed. The discharge nozzle may be turned to any one of four positions.

There are only two bearings. These are of the ball type and require lubrication but once a year. There is but one stuffing box, which is easily accessible. The impeller is made of bronze and is hydraulically balanced. Renewable bronze wearing rings and shaft sleeve are provided.

Illustrating size of new line of Cameron Motor Pumps offered by Ingersoll-Rand Company

These pumps are used against moderate heads for a great variety of services, such as in circulation systems, air conditioning equipment, stand pipe and water supply systems, warehouses, etc.; condensate returns systems; and general transfer service handling a wide variety of liquids.

The pump may be obtained in various motor combinations for all ordinary current conditions and for use in hazardous locations.

Detailed information may be obtained by writing to the manufacturer.

Catalogs ◆ Bulletins

Tractors

Caterpillar Tractor Company Peoria, recently issued a catalog titled "The Caterpillar Twenty-Five," which describes the assembly, design, performance and general utility of that type of tractor. Copies of the catalog may be obtained by writing Caterpillar Tractor Company, Peoria, Illinois.

Core Bit Setting

Sullivan Machinery Company, New York, recently published Bulletin No. 85-RA which describes the use of small African Bortz for setting core drill bits, the development of round shoulder bits set with Bortz and their effect on drilling efficiency and economy and the Sullivan "Readyset" Bortz bit service to core drill users. A copy of the bulletin may be obtained by writing Sullivan Machinery Company, 30 Church Street, New York, New York.

Buildings

The Austin Company, Cleveland, has released a booklet called "101 Questions That Should Be Answered Before You Build." Copies of this booklet may be obtained by writing The Austin Company, 16, 112 Euclid Avenue, Cleveland, Ohio.

Pump Valves

Mission Sales Company, Houston, recently issued a bulletin entitled "A Pump Is No Better Than Its Valves," in which there is a complete description of the function of the Mission valve and its composition and manufacture. Copies of the bulletin may be obtained by writing Mission Sales Company, 2416 Railroad Street, Houston, Texas.

Explosives

Atlas Powder Company, Wilmington, Delaware, recently published a 40-page booklet entitled "Geophysical Prospecting With Explosives," which has a three-fold purpose: first, to inform all interested parties of the history and background of geophysical exploration for minerals; second, to supply elementary aspects of the theory involved in the use of the seismograph and the part played by explosives of various type and of detonating agents; third, to provide detailed information on the Atlas brands of explosives that are adaptable for such work. The historical and geophysical discussions are the work of Dr. J. Brian, formerly chief geophysicist of Shell Petroleum Corporation.

A copy of "Geophysical Prospecting With Explosives" may be obtained by writing Atlas Powder Company, Wilmington, Delaware.

— — — — — — ***MAIL COUPON*** — — — — — —

Company.....

Address.....

Please send me, without obligation, free booklet described in THE OIL WEEKLY, January 22, 1932.

Name.....

Address.....

NEWS *from the* *Industry's* EQUIPMENT MAKERS

Keeping in touch with developments with Manufacturers and Supply Dealers

Tinker Roller Bearing Company, Canton, Ohio, announces that William E. Umstattd has been made executive vice president of the company. Mr. Umstattd has been with the Timken organization for 13 years, during the last two years of which he has occupied the capacity of factory manager.

Timken Steel and Tube Company, Canton, Ohio, has announced that Henry H. Timken, Jr., has been made assistant to the president of the company. He has been serving in the capacity of assistant works manager of Timken Roller Bearing Company for the past two years.

Arthur A. Johnson, president of Arthur A. Johnson Corporation, contractors, announces the purchase of the assets and good will of McRae Paint Products, Inc., and McEverlast, Inc., manufacturing and selling units engaged in the distribution of the Hunt process of curing concrete and McEverlast pipe line coatings. Mr. Johnson states that a new corporation will be formed which will combine the activities of the old companies, continuing the business on a basis of national and international distribution. G. R. March formerly vice-president and eastern manager of McEverlast, Inc., will be associated with Mr. Johnson. The names of the officers of Johnson-March Corporation will be announced in the near future.

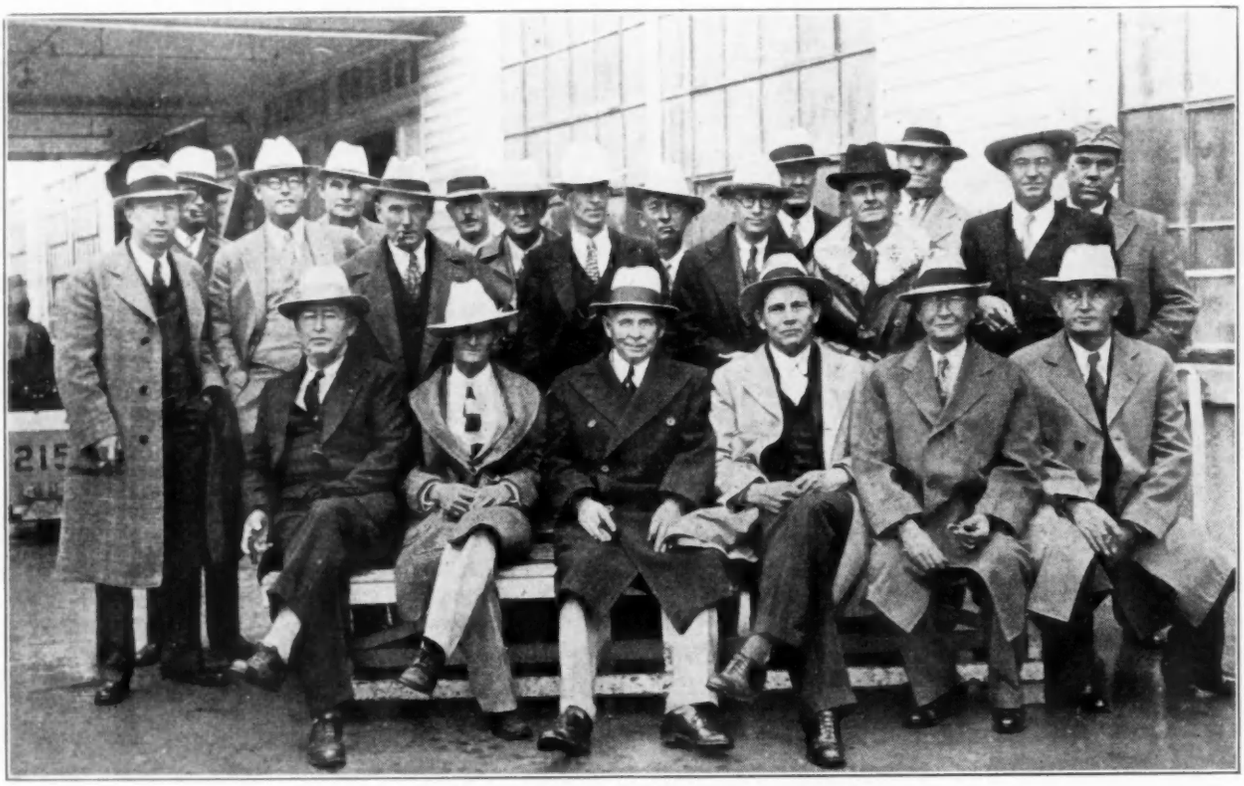
Reed Roller Bit Company of Houston has announced that H. B. Book, formerly representative of the company in Calgary, Canada, has been transferred to Amarillo, Texas, where he will maintain headquarters at the Capitol Hotel.

Halliburton Oil Well Cementing Company, which recently took over the full hole cementing device of the Manning estate and others, announces that M. Manning, head of Houston Oil Fields Material Company, has been retained to introduce the instrument to Texas and Louisiana operators.

Mr. Manning, who has devoted considerable study to cementing problems, especially in the Texas and Louisiana Gulf Coasts, will continue as active head of Houston Oil Fields Material Company, although the major portion of his time during the period of introducing the tool will be devoted to Halliburton activities in the two states.

The full hole cementing device was the joint invention of the late S. E. Red Manning and his brother, M. "Bink" Manning.

E. C. SULLIVAN, Tulsa, has arrived in Casper and will take charge of the offices of Rocky Mountain Drilling Company in Midwest Refining Company's building. Rocky Mountain Drilling Company is a subsidiary of Noble Drilling Company, Tulsa. It has drilling contracts under way with rotary equipment for Ohio Oil Company, Prairie Oil & Gas Company, and others.



TEXAS COMPANY SUPERINTENDENTS

*Meeting of The Texas Company district superintendents and field foremen, Gulf Coast Division, in Houston December 19, 1932, for the purpose of awarding lease efficiency prizes, banquet, and general discussion relative to plans for 1932. Picture taken while visiting main office and plant of Hughes Tool Company. Standing (left to right)—Frank Nolen, Ch. Whseman, Houston; L. E. Bales, Dist. Supt., Hull and Barbers Hill; R. B. Leggett, Asst. Dist. Supt., Darst Creek and Luling; H. G. Shook, Dist. Supt., West Columbia; O. H. Matthews, Prod. Foreman, Sour Lake; C. C. Shields, Ch. Clerk, Houston; W. W. Phillips, Prod. Foreman, West Columbia; *D. A. Roberts, Pumper, Darst Creek; E. C. Middleton, Prod. Foreman, Laredo; L. T. Tighe, Prod. Foreman, Humble; M. Westbrook, Dist. Supt., Port Neches; *C. C. Bass, Pumper, Humble; W. J. Sherman, Secy. to Div. Mgr., Houston; K. G. Mackay, Prod. Foreman, Mexia; C. L. Raney, Drlg. Rig Foreman, West Columbia. Seated (left to right)—A. J. Maxwell, Prod. Foreman, Hull; *J. C. Weaver, Gang Pusher, Humble; F. L. Hugus, Dist. Supt., Darst Creek and Luling; O. W. Biggs, Dist. Supt., Humble; Paine Pannill, Gen. Supt. South Texas Div.; R. L. Coder, Drlg. Rig Foreman, Barbers Hill.*

(*) Efficiency contest winners.

Squeaks from the Bull Wheel

▼ ▼ ▼

So you are the sole survivor of a shipwreck. Tell me how you came to be saved.

Well, you see, lady, I missed the boat.

New Porter—Cheer up, Mistah Jones, faith can move mountains.

Engineer (looking over the derailed engine)—Okay, Pluto; go get her so we can get this train moving again.

"And upon what income do you propose to support my daunghter?"

"Five thousand a year."

"Oh, I see. Then with her private income of five thousand a——"

"I've counted that in."

Grace: "Why do you wait 15 minutes after you arrive to kiss me?"

Lester: "I have to wait for the paint to dry."

"Harry, why don't you smoke?"

"Because I'm not fat, I haven't a cough, never like to walk and I'm satisfied."

Mother: "Now, Willie, I want you to get acquainted with the new nurse. Go in and kiss her nicely."

Willie: "Yes, and get my face slapped like papa did?"

Salesman: "Don't you find that a baby brightens up a household wonderfully?"

Woman Customer: "Yes, we have the electric lights going most of the time now."

"And has she made him a good wife?"

"I don't know. But I do know she has made him a very good husband."

Him: "Do you remember the boy that used to sit behind you at school and pull your pigtails?"

Her: "Oh, is that who you are?"

Him: "No, indeed — that was my father."

Three-year-old Nancy's father had installed a new radio. Nancy listened with rapt attention to everything — music, speeches and station announcements.

That night she knelt to say her "Now I lay me." At the end she paused a moment, and then said: "Tomorrow night at this time there will be another prayer."

It was a fashionable wedding. The bridegroom had no visible means of support save his father, who was rich.

When he came to the stage of the service where he had to repeat, "With all my worldly goods I thee endow," his father said, in a whisper which could be heard all over the church:

"Heavens! There goes his bicycle!"

"You didn't know who I was this morning, did you?"

"No, who were you?"

GRAVEL DIGGERS

Geophysicists operating in the Gulf Coast country may take another name, if reports of some of the farmers in that section may be taken at face value.

The other day a friend of ours was out inspecting some land in South Texas. He ran across some large holes on a farm, evidently made by a seismograph crew. Turning to the farmer he asked:

"What caused these holes?"

"Well," replied the farmer, "there was some fellers here with the Humble Oil Company last month and I think they was looking for gravel."

"What makes you think that?"

"I guess they was looking for gravel," answered the farmer. "They musta thought it was easier to dynamite it up instead of digging it up—they didn't look like they liked hard work none to well. So they just dug a hole and put some dynamite in it and set 'er off to uncover the gravel."

"Did they find any gravel?"

"I don't know. They ain't been back, so I guess they didn't."

Sober One: "My good man, you had better take the street car home."

The Stew. "Sh'no ushe. Wife wouldn't let me keep it in the houshe."

Here are some answers from examination papers of school children. They were gathered by the Research Department of Ohio State University.

A grass widow is the wife of a vegetarian.

A man who marries twice commits bigotry.

In Christianity a man may have only one wife; that is called monotony.

A spinster is a bachelor's wife.

A skeleton is a man with his inside out, and his outside off.

A goblet is a male turkey.

An epistle is the wife of an apostle.

S. O. S. is a musical term meaning same only softer.

A buttress is a woman who makes butter.

Solomon had 300 wives and 700 porcupines.

A negro woman walked into an insurance office and asked whether they dealt in fire insurance.

"We do," a clerk replied. "What do you want insured?"

"Mah husband."

"Then you don't want fire insurance," smiled the clerk as he reached for another application form. "What you want is a life insurance policy."

"No, Ah don't," exclaimed the woman. "Ah wants fire insurance. Mah husband been fired fo' times in de las' two weeks."

DIAMOND METAL

A bit is "dull" only because it is worn away. It wears away because it is meeting harder resistance. Expensive round trips are made to replace dull bits. Harder bits were made to prolong their wear. Hard surfacing methods came into usage—then came DIAMOND METAL! It saves money "in the long run."

— A TEXAS PRODUCT —

DIAMOND METAL COMPANY

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Republic Steel Corporation
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The Rice Hotel Group
Rollway Bearing Company

Second National Bank
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SKF Industries, Inc.
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Snetcher & Pittman
South Chester Tube Company
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Williamsport Wire Rope Company
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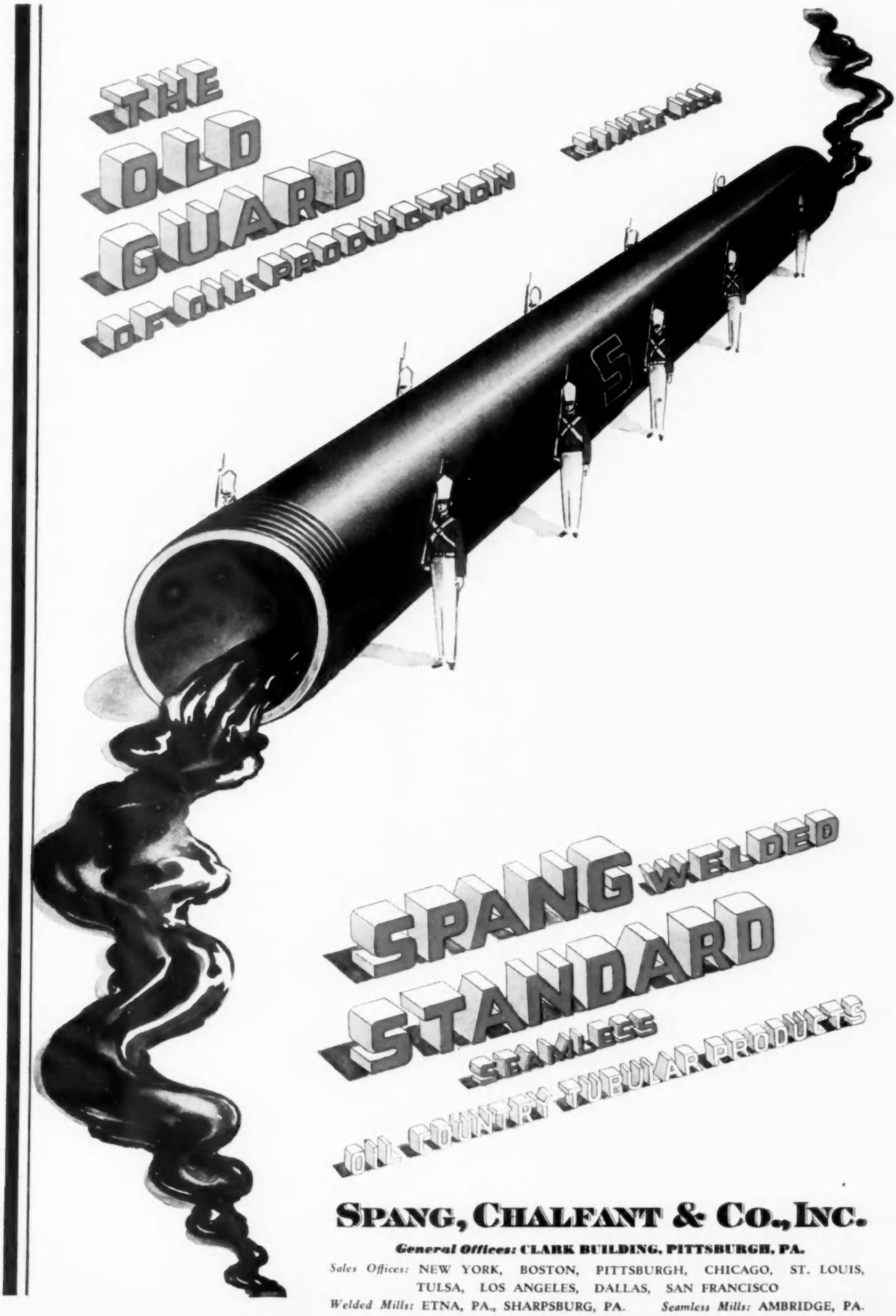

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